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## EDITORIAL NOTES.

It is noteworthy that, of four orations (including the president's address) delivered at a recent meeting of the A. M. A., three had more or less to do with, or else directly accented, a particular desideratum—the education of the public in matters pertaining to public health and the work of the physician in securing sanitary improvements. Dr. Burrell, the president, gives as the title of his address, "A New Duty of the Medical Profession; The Education of the Public in Scientific Medicine." Dr. Harrington, in the oration on State Medicine, discusses in a masterly manner the movement to secure a Department of Public Health, justly arguing that such should be developed from the present Public Health and Marine Hospital Service, but pointing out most clearly that to obtain a body competent to deal with national problems of sanitation, quarantine, etc., a constitutional amendment will be required; to secure this, the public must be educated to see its necessity. Dr. Thayer, in the oration on Medicine, the title of which is "Some Relations of the Physician to the Public," discusses the same question. Is all this without significance? About four years ago Dr. McCormack, in his talks to

county medical societies all over the country, urged the dropping of the foolish robe of secrecy with which our profession had clothed itself, and the open and frank discussion of our work and our problems with the lay public. For at least three years, your JOURNAL has, in season and out, preached the same thing, urged upon county societies that they hold meetings with the public and with various classes of citizens at which meetings matters of common interest should be discussed. We have all seen the absurd opposition, originating in ignorance or misunderstanding, to public health legislation and to the enforcement of measures intended for the protection of the public, which we as physicians have urged. Now, shall we be in the front rank of the procession, or shall we drag along toward the rear? In the matter of reorganization, California was one of the first states to adopt our present plan, founding the whole structure of medical organization on the county society unit. Shall we again be among the first to take up this matter of public education at home, and see to it that all over our state the people are taught the nature of our efforts in their behalf and their criminal apathy? Tuberculosis kills more people in this country every five years than died in the whole course of the civil war; and tuberculosis is a preventable disease. Typhoid fever costs the community millions of dollars each year; and typhoid fever is a filth disease. Should not every citizen of our state know that if he gets typhoid fever it is because he has eaten or drunk somewhat from the urine or the feces of some other person? And that he has done so because of criminal carelessness? This movement is surely coming; shall we lead it or be driven by it?

For most of the years of its life, this JOURNAL has been one of those to raise its voice in the demand that more physicians take an active interest in the political control and government of our states and of our nation. Practically all law making has been done since the United States began as such, by lawyers. As a result, we have more laws than we know what to do with and our courts are, almost without exception, devoted to the matter of finding new technicalities in and conflicts between these numerous laws. The people have suffered. Public health legislation has been ignored. The voice of the scientific minister to the health and welfare of the people has not been heard, as it should have been, in our legislative halls. Again is this matter forced upon our attention, and this time from an entirely new source. Mr. Gillett, the Governor of California, under date of June 15th, has written the letter which follows to the Councillor for the 8th District, Dr. Parkinson. The letter is most significant, and, with the consent of the Governor and of Dr. Parkinson, we very gladly present it to you herewith for your careful consideration. Is it not timely? Is it not sound-common-sense? Should not medical men take their place in our legislatures to the end that the

public good and the public health be more adequately served? It is a sacrifice, of course. "A sacrifice of time and energy, to go to the legislature and "stand for" all that there happens; but is it not our duty, and are we not neglecting our plain duty to the people when we ignore this governmental function which is ours, not alone as citizens, but as members of a profession that has for its charge, the public health? It would seem so. It is true that a few distinguished physicians have, in the past, devoted a portion of their time and their energies to this duty. But there should be more such and the influence of our profession should be felt in the houses of our legislature, not spasmodically, but increasingly with each passing year. It is not a right we should claim, but a duty we should perform. Shall we perform it?

"As the time for nominating Senators and Assemblymen throughout the state is fast approaching, there is one thing that I would like to call to your attention that I trust will be presented to the medical society. I think it is important that there should be at least two physicians in the Legislature, either in the Senate or Assembly, or both, to look after matters pertaining to the practice of Medicine in this state, that may come up before the Legislature for consideration. One can't tell just exactly what bills will be presented or how meritorious they may be. I would like to have somebody who is connected with the Senate or Assembly to consult with concerning legislation of this character, and would therefore like to see several members of your profession elected. I think it is very important that the medical profession should take an active interest in these matters, and believing that you entertain the same belief I call the matter to your attention so that some effort may be made, if the doctors of the state think necessary, to secure such representation."

The Supreme Court, in Bank, under date of June 15th, 1908, has recorded another decision anent the

law regulating the practice of medicine, etc., in the State of California.  
**ANOTHER DECISION.** Technically, it is the case *ex parte* C. D. Greenhall, on habeas corpus;

Crim. No. 1441. Greenhall, holding himself out to be a "chiropractic," and so practicing whatever that peculiar art may be, in Los Angeles, was arrested because he did not have a license so to practice. Unfortunately, the complaint upon which he was arrested was loosely drawn and alleged that he did unlawfully treat the sick or afflicted by a system or mode known as the "chiropractic;" it did not allege that he practiced or held himself out as practicing such a system of treating the sick or afflicted. On this technicality the court spent most of its energies; the point is a minor one, though it will be valuable to remember. The court seemed to take the attitude that the loose wording of the complaint would apply to one who "incidentally and gratui-

tously suggests or puts into operation some method of treatment in the case of one who is 'sick or afflicted,'" in contra-distinction to one who practices such a method as a means of livelihood. Thus any one who tendered his services or who actually came to the relief of some injured, sick or afflicted person in an emergency, for instance, if he did not possess a license from the Board of Medical Examiners so to do, might be held liable under a complaint such as this one. The point is well taken and a chance for some further legal absurdity is in consequence avoided. But all this is merely incidental; doubtless if a proper complaint is drawn and Greenhall is again arrested, he will be convicted without redress. The valuable portion of the decision in question is contained in the closing paragraph. It must be remembered, by the way, that in the plaintiff's brief on appeal it was claimed that the law regulating the practice of medicine was unconstitutional. On this point the learned justices of the Supreme Court have the following to say:

"In view of our decisions on the general subject, and the later decisions generally of courts of other states, we are not particularly impressed by the argument made in support of the contention that the legislative act of 1907 is unconstitutional. Because of our conclusion upon the question of the sufficiency of the complaint, it will not, however, be necessary to consider this contention."

It would appear from this that the long years of uncertainty (on the part of those who wish to be uncertain) are over and that it may from now be taken as an assured fact that the law is constitutional and will be so held in every essential particular by the court of last resort in our state. This is indeed good news and we may with good reason rejoice; the holding or dismissal of Greenhall is a small matter in comparison with the opinion as to the constitutionality of the law. This will be a sad blow to the small but compact circle of "sore heads" and their diploma mill friends; but that also is cause for rejoicing.

Quite a little has appeared during the past few months concerning the ophthalmo-tuberculin reaction. It is pretty generally understood by this time and is based upon the principle that a small

**OPHTHALMO REACTION.** quantity of tuberculin dropped into the conjunctival sac of a person having tuberculosis will set up a supposedly mild conjunctivitis, and it is assumed that the reaction thus caused is both harmless and at the same time pathognomonic of the disease. Neither of these assumptions is absolutely correct. There are now recorded a not inconsiderable number of instances in which the reaction set up was far from mild, causing, in some cases, dangerous inflammation with tissue destruction. And, furthermore, the reaction is not pathognomonic. For instance, if the tuberculin is dropped into the eye of a perfectly healthy person, no

reaction will occur; yet, after the passage of a period of time as yet not determined as to limit, if the agent be dropped again into the same eye of the same healthy individual, the typical reaction of tuberculosis will be noted. We are all too prone to take up these newly announced procedures, to pin faith to them, and to use them far too recklessly. In all things in which the element of possible danger enters, great caution should be the rule until those who are competent to observe and are so situated that they may study out these problems in all their details, have reported. And, moreover, as was pointed out at the recent meeting of the State Society, it is not well to accept any sign as absolutely pathognomonic of any disease; all seem to be fallacious in some degree.

In April, 1906, the San Francisco County Medical Society lost its home and its library, which was fast reaching considerable proportions and distinct value. Practically every one of its members likewise suffered, and for a time the Society was in a very precarious condition. But the meeting for June, 1908, two years and two months after the disaster, marked the beginning of a change for the better; at that time the Society held its first meeting in its new home. Once more San Francisco County has a real "home" for its library and for its meetings, and, through the most unbounded generosity of our brother physicians in all parts of the world, it also has, once more, a library of no mean proportions for the use of its members. About nine rooms on the top floor of the Butler Building (corner of Geary and Stockton streets) were secured before the building was finished and these have been thrown together forming one large meeting room, with two smaller reading rooms adjoining. All of these rooms are, or shortly will be, lined with shelving for the library volumes and make a most attractive place, not alone for the regular meetings of the Society, but also for reading and study. The effect has already been noted and applications for membership are coming in with increasing numbers. We certainly congratulate the Society upon its rehabilitation, and again take this opportunity to thank all and sundry who have so generously given books to the library. We wish the Society a very long and a very useful life.

It is quite within the range of possibility (though, where a printer is involved, it is never certain) that the 1908 edition of the Register and  
**THE NEW REGISTER.** Directory will be issued before the end of the present month of August; at any rate, it is now in the hands of the printer. The number of changes, as already noted in a previous issue of the JOURNAL, is very much in excess of any previous year. Undoubtedly there are many changes of address which have not come to our attention; if yours is one, please do not kick. We have done everything humanly possible to secure all the changes of address throughout the

state. In some instances the secretaries of county societies, though importuned repeatedly to do so, have failed to send us the changes within their territory; later, some of these will doubtless "kick." In most counties the Register will be sent to the Secretary of the County Medical Society for distribution to the members. If you do not receive a copy by September, inquire of your local Secretary. The list of "address unknown" is growing. It is the intention, eventually, and as soon as the list of licentiates can be checked, to make a section of the Register which will include the names of all licentiates located outside the state. That is a long and a difficult task and it may be a year or two before it can be done, but it will come, with time.

For some years the *Journal of the A. M. A.* has published, in the closing number of each half-year, an index of current medical literature the real value of which is probably not appreciated as it should be.

#### A WORK OF VALUE.

This index is reprinted as a separate pamphlet and can be had from the *Journal* office at a nominal sum. In the issue of the *Journal* containing the last index was an editorial asking for an expression of opinion from the profession as to whether or not this work—a by no means small task—should be continued or not. Apparently it has not received such support and endorsement from the profession at large as it really merits, and hence the query from the editor of the *Journal*. By all means, if our opinion is desired, continue the index. Undoubtedly it will become more popular as time goes by, for the number of physicians who are making use of current medical literature is steadily growing and the index will be more generally used. Then, too, it must not be forgotten that, in all probability, a considerable number of members make use of the index contained in the special number of the *Journal* and do not send for the reprint; thus many use it who are never heard from. It is certainly of the greatest assistance to any one who desires to go over the recent publications in periodicals on any special subject.

In the advertising pages we have a number of cards of physicians who have recently changed their address and in this way desire to call that fact to the attention of their friends in the Society about the state. It is a new thing for the JOURNAL to publish such cards, though the matter has been under discussion by the Publication Committee many times. However, so many changes have taken place in the last two years that it seemed to us that it would be a matter of convenience to print these notices; hence their appearance. Possibly there are some members in Los Angeles, or in other parts of the state who would like to avail themselves of the same privilege. If such there be, a letter addressed to the office of the JOURNAL, Butler Building, San Francisco, will have

#### A NEW DEPARTURE.



an immediate reply giving rates, etc. There ought to be enough physicians in the state, who have recently moved to permanent offices; to fill several pages and we shall be very glad to hear from them.

Somebody once coined a very beautiful polysyllabic word doubtless having one or more perfectly good Greek roots, which he advised a palpitating world meant the antagonism to change (not coin-of-the-realm "change," but a changing of conditions that are). The word, alas! has departed from memory, but the condition so eloquently described by it is forced upon one's attention with each passing day of life in this bitter vale of tears. About five years ago the JOURNAL had its official home at 31 Post street, San Francisco; something over four years ago it moved from Post street to the Y. M. C. A. Building, and several notices were sent to each one of our exchanges and to all with whom there passed much correspondence. It may be recalled by some that in April, 1906, we were forced, through no fault of our own, and, we believe, with considerable regret on the part of the landlord, to vacate the Y. M. C. A. Building offices and seek others. Again notices to this effect were sent out to all and sundry, though with less confidence in the result, be it known, than when the previous notices were mailed. So respectfully conservative are a goodly number of people, even those who control the destinies—and the mailing lists—of most of our exchanges, that a large quantity of mail still comes to us addressed to "31 Post street" (where we have not been for some five years) and a still larger amount is to this day addressed to us at the "Y. M. C. A. Building"—which we hastily left more than two years ago. Would that some mighty intellect might be put upon the world to elucidate the whereforeness of this peculiar persistency! Kind friends, the office of the CALIFORNIA STATE JOURNAL OF MEDICINE, and of the Medical Society of the State of California, and of the Secretary of the latter and the editor of the former, has been changed from 2210 Jackson street, San Francisco, to the Butler Building, San Francisco. Sometime within the next quarter century will you try and note this fact and change our address on your mailing list? Thanks.

The editor of the *Journal of the South Carolina Medical Association* has resigned from the American

**SUCH A BUSINESS!** Medical Editors' Association and a recent number of his publication sets forth some correspondence explaining the whyfor. You see, the editor in question is a very active gentleman and his state organization is behind him, as it should be. He has repeatedly come out with arguments to the effect that the members of the society, other things being equal, should patronize those firms that advertise in their journal, and has urged the members, whenever a detail man comes into their office, to ask him whether his firm advertises with their journal, and

if not why. That is simple and reasonable. (Incidentally, in passing, let us urge upon the members of our own California Society to do the same thing—and stick to it.) But this did not meet with the full and cordial approval of the last-year president of the Medical Editors' (?) Association, who is a nice, fussily maternal old gentleman, and he chid-ed-ed-ed the South Carolina editor. And just then and there he probably got the surprise of a lifetime, for he was promptly, though withal politely, told to mind his own business and South Carolina would attend to the things which belonged to *its* business; and further, that, in the opinion of the South Carolina editor, a very large number of so-called medical journals represented in the Medical Editors' (?) Association were "no better than they should be" and that it would be an undisguised blessing when they ceased to exist for revenue only and for predatory spoliation. But, good Mr. South Carolina Editor, what could you expect? The "independent" (of morals and self respect) medical (?) journals of this enlightened land do not like state organization journals; they do not like to see the truth even whispered about; they do not at all like to see an organized medical profession coming into its own and demanding recognition. There is a peculiar and penetratingly unpleasant odor which arises from the American Medical Editors' (?) Association and, as you have discovered, it is irritating to the nostrils of an honest man. Too bad; another illusion gone!

Sollmann, in a recent article in the *Journal A. M. A.*, has called attention to the process of mental de-

#### PERNICIOUS PRACTICES.

generation which is begun almost as soon as the medical graduate enters some hospital immediately after his graduation. In almost all, if not all, hospitals, various professors have the pernicious habit of saving a little time and trouble for themselves by using stock formulas and prescriptions for various conditions which they encounter in the patients in their service. These ready-to-wear mixtures are prescribed by number and the patient is supposed to fit them, instead of a prescription being written to fit the patient. Thus the young physician, in the very beginning of his professional work, is instructed in the bad practice of using a fixed or proprietary mixture which is ordered by name or by number—generally the latter. Quite naturally, later in life when he has begun the practice of medicine for himself, he follows the illustrious (?) example set him by his hospital chiefs, and instead of making his medicine fit the patient, he turns to the stock mixture (and manufacturers will furnish innumerable such, with unlimited powers and impossible qualities) and becomes the unthinking user of "ready-to-wear" medicines. If they happen, through some lucky chance, to fit the patient, the patient may be thankful; if they do not—and how often can they?—why then the patient will have to adapt himself to the medicine as best he can. How perfectly grotesque! To distort and debase the practice of medicine at its very inception!



## THE STIMULANTS USED IN COOKING.\*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

The table as a piece of furniture should be held in great esteem. By turns it is loaded with learned books and succulent meats, which serve for nourishment for mind and body. No one who loves his fellow-man wishes to see the pleasures of the table curtailed, for it is here that some of the most delightful intercourse of human beings takes place. As Rudyard Kipling puts it, we can here praise Allah, who has not terminated the delights nor separated the companions. While conversation is the chief pleasurable feature at table, yet the general surroundings and the manner of preparing and serving the food are all contributory to the charm of a convivial gathering.

But good and evil are born at a whelping, and while the table brings us much good, it also brings us much evil. Remonstrance is especially needed against the misuse of spices and pepper. In preparing food, seasoning is important, and when delicately done adds much to our pleasure. Take salt, for instance, of which it is said it is something that being left out makes food taste bad. No matter how carefully the cooking is done, if salt is omitted, the dish will taste flat. The ancients considered salt so necessary a seasoning in all cooking, and held it in such favor that metaphorically they applied the term salt to the witty sayings that give zest to conversation. Stimulating drugs, such as pepper, are added to food either to stir up a jaded appetite, or to take away the flat taste, or to vary the monotony of diet.

It would seem impossible in any of our large cities for a person with a fair digestive system, and moderately well supplied with money, to suffer from monotony of diet. If, after being shown the long list of different good things to eat, one were told that many people live exclusively on bread, meat, potatoes and sugar, with coffee, whisky and pepper, one would be surprised. Nevertheless such is the case. With us this state of affairs would seem especially strange, with a bay and river system that is richer in food than Delaware Bay, and surrounded by the most fertile valleys the world possesses.

The character of our population, too, should prevent sameness in eating. The southern European with his liking for garnishes and vegetables should correct the heavy, monotonous menu of the Anglo-Saxon. The German Israelites are good eaters, and bring us many fine dishes. The Italian market gardeners furnish us with a number of vegetables that in the eastern states are high priced novelties, and the proprietors of Italian vegetable stalls know many a secret of good cooking, especially in the way of soups and salads. In California, therefore, there is no excuse for the deadly round of bread, meat and potatoes that is the curse of the middle and Eastern states.

Our very early ancestors, like the other carnivorous

animals, ate their food as they killed it, while it still had its warmth, and before the myosine had set. The meat was therefore warm and tender. We have learned to keep meat until the myosine again liquefies, and we cook it to restore the volatility of the flavors. In a savage state man's food consists of so few articles, and the cooking is so badly done, that the longing for new sensations to the palate must become intense. The demand for strong spices and alcohols becomes a passion that civilized peoples hardly realize, as, for instance, among Indians, who will drink a diarrhea mixture loaded with Cayenne pepper as a beverage. In this view one can get the attitude of the barbarians toward ancient Rome and can understand why Alaric, on conquering the Eternal City, demanded an annual contribution of pepper. It is said that the Huns in order to make their meat tender would ride on it all day. Between the odors acquired from the rider and from the horse such a piece of meat would go down better for a liberal peppering.

The active overland trade between the Orient and Europe was in spices and other drugs that contained great value in small bulk. It was this Oriental trade that made the commercial predominance of every empire from the Babylonian, down through the Assyrian, Greek, Alexandrian and Roman to the Venetian. It was the spice trade and the desire to reach the Orient by sea to conveniently get at these condiments, that led to the discovery of America and to the rounding of the Cape of Good Hope. Then came the commercial rise of Portugal, Holland and England, and now this Oriental trade has begun to build up the west coast of the United States and San Francisco. The fundamental reason for all this striving is that spices give the human being pleasure, and for pleasure he is willing to go any length, and to endure all hardships, even those of ill health.

In Nuremberg they keep the old home of Albrecht Durer as a revered monument, and it is furnished as nearly as possible in the way it was in the lifetime of the artist. The kitchen is small, and inconvenient. The cooking utensils are few, unhandy and clumsily made, and the stove is a primitive inconvenient affair. No wonder Albrecht died of intestinal cancer; seeing the kind of food his bowels must have been given to elaborate as nourishment for his august brain. As I looked at the kitchen outfit I saw the material evidence of poor cooking, with its natural consequence of longing for pepper and overseasoning, necessitating in its turn the long, expensive, risky camel-freight across the Mesopotamian deserts, through a country controlled by the stupid Turk. The obtuseness of the Turk in commercial matters is proverbial, and he barred the way. No wonder America was discovered, and it was particularly fitting that a lady should give her jewelry to have the matter brought about. The whole of Rabelais, that incarnation of the Middle Ages, who lived in the time of Isabella, is one long expression of the desire to relieve the flatness of ill-cooked food by means of vinegar, salt, mustard,

\*Read before the Sacramento Society for Medical Improvement, March 17, 1908

pepper, and by the smoking and salting of meats. These foods were to be washed down with great quantities of strong drink, on the principle never to spare liquor to those that are at hot work.

In the memory of those now living, the people of the United States were rural. Even the urban populations were countrified in life and thought. It is only of recent years that commerce has so developed as to change the life of the nation. In a rural population the food is bread, meat and potatoes, and nothing else; and the castor is always on the table. Pork is about the only meat used, and it is frequently badly cured. We all of us remember the rusty pork of the farm houses. The bad quality of the meat on the farms leads to the consumption of large quantities of starchy foods, as breads, pies, cakes, and heavy pastries. As sugar grew cheaper it also came more into use. This heavy food, while men were working in the open air on the farm, was usually well assimilated. But as commercial life developed and people got indoor and more sedentary occupations, such concentrated diet acted more and more disastrously on the digestive organs. The combination of heavy feeding with sedentary habits is especially fatal to those that by nature are endowed with a particularly fine digestion. This is one of the most interesting chapters in the hygiene of nutrition, and is best illustrated by a concrete example:

A man past forty-five years of age had a very active occupation before the great fire in San Francisco. He liked good eating, and especially peppery dishes, and also took many drinks of Scotch whisky throughout the day. His elimination was excellent, and pleasure not pain was his portion. After the fire the natural slowing down of elimination at his time of life was accentuated by a sedentary occupation. Burke has said that there are two things we must guard against as we grow older, the pleasures of the table, and a love for accumulating money. This aphorism held true of my man. The quantity of food consumed did not decrease, but the elimination did. The superfluity had to break out somewhere. His face became more full and florid, and its natural wrinkles disappeared, giving him a fictitiously robust appearance. He acquired a catarrhal affection of the bronchial tubes, and a constant cough and clearing of the throat, that is called by the Spanish, "La tos de ricos," the cough of the rich. Rheumatic swelling of some of the finger joints and rheumatic pains arose, and intensely itchy patches of papular eczema appeared. These were the first symptoms of degeneration, which were bound to augment. Is any one so foolishly optimistic as to suppose that this man will cease whipping up his digestive organs with alcohol and pepper? On the contrary, with the increase of his misery, the use of stimulants will tend to increase. That in the long run such excitation does not ameliorate but rather tends to drive one farther into trouble, the ordinary man does not know, or knowing does not heed. It is the observation of such cases that makes me regard the beginning of the fifties as a particu-

larly critical time of life, the dangers of which may be accentuated by many fortuitous circumstances. For instance, in one of Guy de Maupassant's stories the author depicts a character as a man with a most vigorous digestive system, forced into physical inactivity by having had his feet shot off in the Franco-Prussian war. The author describes him as getting himself into a railway carriage. De Maupassant says, "He was perhaps fifty-three years of age, but his hair was already nearly white. He had a bristling moustache, and was very fat and heavy bodied, as strong, active people tend to become when forced into inactivity. He mopped his forehead, and breathing hard, inquired if I should be incommoded by his smoking."

You have here an artistic picture of the aspect of the kind of man I have in mind. He would naturally from the state of his nutrition have seborrhea, and consequently his hair would become by fifty not only gray but white. Being naturally robust he had stout hair, especially in the moustache. As a cripple he had become fat from inaction, which made him puff and perspire when in motion. There was also a catarrh of the upper respiratory passages, and the discomfort of short breathing was relieved by smoking. We have all of us often seen such people hurriedly fumble for their tobacco.

Anatole France also gives a good description of this class of man: "Notwithstanding his gray hair he seemed to be in the full strength of his years. He had a smiling mouth and lively eyes, and the folds of his chin descended majestically down over his stock, that through sympathy had become greasy as the neck that spread over it."

Such men are not ascetics. They enjoy eating, and are apt to be devoted to highly spiced foods. They suffer from all sorts of ailments incident to their mode of life, such as rheumatism, gout, stone in the bladder, biliary calculi, and many irritating eruptions of the skin. At the same time they often are men of immense physical force, and are among the best positive workers in the world. They have a shorter life than nature intended, and may be said to literally dig their grave with their teeth. These vigorous individuals eat until they get that sense of fullness and repletion that comes from taking in a large bulk of food. They sometimes say that the long drawn out dinner or many courses is the only one that gives them entire satisfaction. Their vigorous digestive system enables them to turn this mass of food into nutritious juices that have to be disposed of either as units of work or as excreta, or as fat. As these men grow fatter their capacity for work is lowered, but their voraciousness in eating continues. It is not infrequent for them to have spells of depression and melancholy which they try to escape by drinking. While drunk they do not eat, and after such an enforced fast they crawl out as limp as a rag, but feeling infinitely better mentally. Besides going on a spree they have another natural remedy, an attack of gout, in which their physician puts them on a low diet, and a course of purgatives and alkalis. Such great, fat, pulpy in-

dividuals form excellent meat for microbes, and if the bursting of an overfull blood vessel does not kill them, pneumonia may, and in any event when once attacked by one of the great maladies their exit is apt to be rapid.

The flat taste of food is usually due to overcooking or bad salting. The flavors of food are the soluble substances that touch the palate, and the odors that please the sense of smell. A good example in this kind was given in the late Spanish war. The army before Santiago was supplied with canned roast beef, which proved meat out of which the soluble, natural flavors had been taken to make beef extracts: the capitalists' idea of killing two birds with one stone. In that warm climate where meat is not very well tolerated at best, this canned roast beef was nauseating. In such a case a large quantity of pepper would have made it more palatable, but not more wholesome.

One of the secrets of cooking is not to allow the escape of these savors, and if they escape, and if the odor of the cooking is throughout the house one may expect a tasteless dinner, for the bouquet of the food is in the atmosphere and not in the viands. A cauliflower, for instance, that is cooked for ten or fifteen minutes over a quick fire in well salted water, will be firm and stand up in the dish, and will have a well defined agreeable taste, whereas if longer and more slowly cooked it will fall into a shapeless flat-tasting mush, requiring pepper to whip it into line for the table.

Many people take stimulants to increase appetite. This at times is beneficial, and is one of the most frequent therapeutic measures to bring about a balance of health. Sometimes the vital forces seem to slow down, and the individual "fails," as we say, from no ascertainable cause. Under such circumstances a stimulant of any kind may be of service. It may be a course of the mineral acids, it may be travel, it may be a greater variety of food. In whatever form it comes it whips up the vital forces that were insensibly slowing down, and does good. A discreet amount of stimulation is often therefore as grateful to the body as a fertilizer is to a plant. Stimulation may, however, like all good things, be carried to excess. Many people so copiously pepper their food that they fall directly into the monotony of diet from which they desire to escape. Their taste becomes so vitiated that the only flavor they appreciate is pepper, or something equally strong.

Many diseases are detrimentally affected by the ingestion of pepper. Rosacea is an excellent example of a disease that reacts unfavorably to the ingestion of pepper or alcoholic stimulants. Many patients will tell you that a glass of wine will set their face in a blaze.

Erythematous eczema of the face is another good example. In this disease the relationship between functional disturbances of the gastro-intestinal tract and the skin affection is often most marked. I refer here to the type depicted in Louis A. Duhring's *Atlas of Skin Diseases*, where the skin is red and

desquamating, and the natural lines of the skin are accentuated. The eyes are sad and tired looking, as if from lack of sleep, and the corners of the mouth drawn down, giving the man the appearance of invincible melancholy. If at all observant it is likely that this person has found that indulgence in peppers, spices, alcohols, and the strong nerve stimulants, such as tea and coffee, are followed by an attack of cutaneous irritation.

Not long ago a young man applied to me for the relief of a tantalizing pruritus. I had long previously treated the father for a severe papular eczema of the face. This was not the sole trouble the father had, for he was highly nervous, had a florid face, and was addicted to drink. The son was of the same tense, high strung type as the father, and his belly had two large scars on it resulting from an operation for appendicitis. The fact of appendicitis was itself a sign of intestinal irritation, inflammation of the appendix being only the highly dangerous part of a much more extensive catarrhal inflammation of the bowels, just as mastoiditis is the highly dangerous point in a catarrhal affection of the ear. By taking out the appendix, however, the catarrhal trouble in the rest of the intestines is not cured. My hypothesis therefore was that the pruritus was due to intestinal irritation and that possibly the predisposition to it was inherited, and he was treated accordingly. Among other things he was set on a diet in which pepper was interdicted. Shortly afterwards he returned, saying that for some time he had been better, but that the preceding Sunday night he had had a severe attack of itching which had prevented sleep. On questioning him he admitted eating curry that evening for dinner, and affirmed that he did not know that curry is pepper. It may be that curry did not cause the attack of itching, but its ingestion occurred at the right time for it to have had this effect. This unperceived enjoyment of pepper and other condiments should always be borne in mind in ascertaining the habits or directing the diet of even amenable patients. In the first place people are not used to thinking along these lines. I remember one time speaking very earnestly to a thoughtful woman on the evil effects of pepper as particularly emphasized in a member of her family. The day following this conversation I lunched in her household, and we had sausages loaded with pepper. Then again many dishes contain pepper so artfully masked as usually to escape detection. An intelligent man suffered exquisitely from neurotic eczema, and I had repeatedly told him in a general way to abstain from pepper. On one of his visits I handed him a list of dishes apt to be highly peppered. On reading it he remarked reflectively that he had just eaten chowder in a restaurant. Patients should also be told to beware of purees or thick soups, as such dishes, that otherwise taste flat, have often pepper added to them to impart a warm full taste, agreeable to the palate. While delightful to the palate, and warm and comforting to the stomach, farther down the alimentary canal they may set every one



of the valvulae conniventes, or winking valves, violently blinking.

I know of no better demonstration of what an eczema patient should not eat, than a good free lunch counter. You there see savory Spanish stews, stuffed peppers, strong cheese, baked beans loaded with pepper, well spiced sausages and pickles. There will also be salt meats, and many foods impregnated with vinegar. The point of view of the proprietor of a free lunch counter is well illustrated by the following story from Rabelais:

A prince wishing to conquer a king in whose country he had landed, sent him a box containing a very hot confection. The king partook of these condiments, and straightway his mouth began to burn. To allay his thirst his attendants put a funnel into his mouth and poured down a cask of wine. The courtiers seeing the king with such a magnificent thirst, also partook of the confection, and as a consequence drank copiously, and soon became drunk. The common people seeing their king and nobles all dead drunk, thought it the usual preparation for battle, and got drunk too. The inebriated town was attacked at the psychological moment, or rather at the unpsychological moment, as the inhabitants were unconscious, and readily fell a prey to the enterprising prince who devised the scheme.

The following is a list of some peppery foods and condiments which should be avoided by those sensitive to the drug:

- Black pepper.
- White pepper.
- Red pepper.
- Paprika.
- Ground chili.
- Curry powder.
- Pepper sauce.
- Chili sauce.
- Tobasco sauce.
- Worcestershire sauce.
- Catsup.
- Chow-chow.
- Most varieties of pickles.
- Mustard through all its forms; mayonnaise, for instance, is equivalent to a pepper.
- Purees.
- Welsh rabbit.
- Most Hungarian dishes.
- All Spanish dishes, as tamales and enchiladas.
- All dishes a la Newburg.
- Many scalloped dishes.
- Sausages of all varieties.
- Dressing of fowls.
- Stews and hashes may contain pepper.
- Salads are apt to be full of pepper.
- Chowder, eaten in a restaurant.
- Canned tomatoes with red pepper.
- Baked beans with tomato sauce.
- Oyster cocktails.
- Hashed potatoes are usually full of pepper.
- Ginger and cloves.
- Chutney sauce.
- Pepper is a favorite method of hiding over-cook-

ing, and is so used by many cooks. If a cook has the "pepper habit," brown some cornstarch, take most of the pepper out of the pepper box, and add the browned cornstarch. These lazy cooks seldom taste their dishes in the preparing, and the ruse escapes detection.

From what I know of human nature, I am of the opinion that the reading of the above list will rather serve as an incentive to eating pepper than as a deterrent.

It should always be borne in mind that pepper is a drug, and a very irritating stimulant one at that. It is a drug that is taken for fun, and one must be always on one's guard about things taken for sport. It is a wise rule not to try to get too much fun out of any drug. Men who try to do so, usually find their path to lead straight to a physician's office, and it is an old saying that, "He who dwells with doctors dwells in misery."

## REMOVAL OF TONSILS UNDER LOCAL ANESTHESIA.\*

By E. C. SEWALL, M. D., San Francisco

I shall not go into the indications for the removal of the tonsil. It is a broad subject and one pretty well thrashed over. All are, however, pretty well agreed that, when the indications are such as to demand the removal, the offending body should be extirpated in its entirety. This paper concerns itself only with the operative technic. For the sake of clearness a few anatomical facts must be mentioned.

The tonsils are a part of what Waldeyer has called the adenoid ring. We have them lying on each side of the pharynx; isolated masses of adenoid tissue whose function we do not know. Lymphoid follicles are found scattered among the lymphoid tissue. Opening into the pharynx are the furrows or clefts called crypts, lined with stratified pavement epithelium and often containing degenerated epithelium, leukocytes and lymphocytes. The tonsil lies in a cul de sac formed by the palatoglossus in front, called the anterior pillar of the pharynx, and the palatopharyngeus behind, known as the posterior pillar. Above the tonsil, there is left a space called the supra-tonsillar fossa. This is covered by a fold of mucus membrane called the plica triangularis. Externally the tonsil is limited by a fibrous capsule which lies in relation to the superior constrictor of the pharynx. The superior constrictor then forms the outer wall of the containing cavity. As can be seen in the specimens presented, this limiting membrane covers in the smooth rounded tonsillar substance. The pillars are sometimes distinct and free from the tonsil, but often are grown fast to it. Again, we find tonsils of large size completely hidden under the anterior pillar, their presence shown by the bulging of the part when the patient swallows or felt by the examining finger.

The arteries supplying the tonsils are the dorsalis

\*Read before the Cooper College Science Club.

lingue from the lingual, the ascending palatine and tonsillar from the facial; both being separated from the tonsil by the superior constrictor, ascending pharyngeal from the external carotid; the descending palatine branch of internal maxillary and a twig of small meningeal. The internal carotid lies behind and to the outer side of the tonsil, nearly an inch distant from it.

The lymphatics are of importance, a close plexus of lymphatic vessels surrounds each follicle from these plexus, the lymphatic vessels pass to the sub-maxillary lymph glands below the angle of the jaw. From the sub-maxillary glands, the lymph passes to the deep cervical glands.

The consideration of the removal of tonsils has received a great deal of attention in recent literature. The methods of the past have not proved satisfactory except in a certain class of cases, i. e., those in which the tonsil was pendulous and easily removed. The instrument most commonly used was some form of guillotine and we must give credit that with this instrument the tonsils were very quickly extirpated without an anesthetic usually, and with but little discomfort or danger to the patient. However, in such cases even we have a method preferable to the use of the guillotine and one which we can apply with almost the same ease and with greater safety to the patient. I refer to the use of the cold wire snare, of the advantages of which I will speak later.

There are patients, however, and they form according to my experience by far the larger proportion, in which the tonsils are so intimately connected with the pillars of the pharynx that this removal by the guillotine alone can only be an incomplete one. It is this class of cases that has led to dissatisfaction with former methods. We are trying to remove a mass which is firmly attached not only externally, but in front and behind to the surrounding soft parts. The anterior pillar lies over it anteriorly. Perhaps only a very little of the tonsil shows beyond its edge. The pillar is grown fast to the tonsil and must be separated from it, as also must the posterior, before we can properly remove it.

This constitutes all that is difficult in the operation. The act of removing the tonsil once it is freed from the pillars is easy. The separation of the pillars takes some time and no little dexterity, and consequently has led to the employment of general anesthesia. The pendulum has swung so far now that in this country tonsils are removed very largely under general anesthesia. One easily gets the general anesthesia habit. It is so much easier for the operator, and thus general anesthesia becomes the routine in tonsil removal.

Now, in the free lying tonsils, its employment is quite unnecessary, except in cases where we deem it wise on account of the personal equation and even in these buried tonsils of the most exaggerated description I have found that the employment of a general anesthetic is rarely necessary.

Where removal is indicated, the tonsil must be extirpated in its entirety; if impossible otherwise,

then under a general anesthetic. But I have found in most cases that by employing a local anesthetic by the injection-infiltration method, the tonsils can be separated from the pillar and removed. The patient suffers some pain surely, and one must be a judge of the disposition of a child for whom one had better employ general anesthesia. I have recently operated upon twenty-seven patients under local anesthetic. In some of these cases the tonsils were more or less free and the work was as quickly done, nearly, as with a guillotine. In many, however, the tonsils were buried under the pillars and in one particularly, a girl of 11 years who had undergone repeated lancings for recurring peritonsillar abscesses, the tonsil was lost under the anterior pillar and was fastened to the soft parts by the firmest cicatricial bands. The work requires tact on the part of the operator. The patient must be kept constantly in hand during the work. They often cry, largely from nervousness, and there is considerable pain connected with the whole procedure. Patients stand it very well as a rule, however. Two of my patients were only five years of age. One of these little ones I show this evening. His tonsils were removed one at a time with interval of a few weeks between. If the pain had been very terrifying I doubt if he would have returned for the second operation. I usually endeavor to get both tonsils at one sitting, but this is not always advisable. The majority of the patients were under ten years of age.

The technic is as follows: I first paint the anterior pillar with 20% cocain. This is used very sparingly merely to prevent pain from the needle. Next a puncture is made with an ordinary hypodermic syringe in the anterior pillar and a considerable quantity of the anesthetic used, well diluted, is injected. Many punctures are made, and one or two deep toward the base of the tonsil. In the work at first I used cocain and would inject gr. 1-12 combined with 1-1200 adrenalin. In the last eight cases, however, I have used eucaine because of fear of cocain, although I never saw any untoward symptoms from its use. Of the eucaine, which the pharmacopeia says may be used ad. lib. in 1% solution, I use one dram and inject in many places. I have also used normal salt solution in one case, practically walled the tonsil off in a large amount of it. The patient did not suffer much pain. I immediately, on finishing the injection, pick up the anterior pillar with a blunt pointed tonsil knife. The pillar is thus separated from the tonsil, and there is no danger of going through the constrictor where the vessel lies, because the knife has a probe point and also is always in view through the semi-transparent pillar. After bringing out the probe point the cut is finished by a ripping movement. There is thus no blind separation. The tonsil is now grasped by the forcep, pynchons, to which I have added a hasp to hold them when once they catch the tonsil. The tonsil is drawn forward so the attachments of the posterior pillar are better seen. These are separated as were the an-

terior attachments. We now draw the tonsil outward and being sure that it is free except at the base, slip the cold wire snare over the straight handle of the forcep and the stiff piano wire encircles the tonsil. A turn of the windlass and the tonsil is out.

There has been no cutting, and if the separation has been properly done, the tonsil is entire. The cold wire of considerable size has constricted the vessels instead of cutting them, and consequently the danger from hemorrhage is much lessened. It is superior to any cutting instrument also because once it is beyond the greater curvature of the tonsil, instead of cutting at that point it works its way toward the point of least resistance, the base, and removes the part entire.

The snare I show was made under my direction by Tieman & Co., and is strong, simple and quickly handled.

#### Discussion.

Dr. Barkan: Up to a few years ago I was doing this work and had done it for many years. So far as the faucial tonsils are concerned I used the guillotine almost exclusively, and I did not have as much trouble as Dr. Sewall would indicate with regard to the fair ablation of the hypertrophied tonsil and the arches being often adherent. While recurrence occurred occasionally, it was not so in a large percentage of cases. All in all, considering the fact that we never used the general anesthetic at that time, accidents occurred rarely, and both patients and physicians were satisfied with the results. Sometimes after removal of faucial tonsils these cases looked very ugly and infected surfaces presented themselves. The patient had fever for a day or two, but with the usual treatment for such cases the patient tided over this little period and made a fair recovery. So far as my impression goes, I would say that in the removal of tonsils the surgical principle is the correct one, that a tonsil giving rise to repeated disease might be and should be enucleated. My objection has been and is still to doing this work under a general anesthetic. It seems to me quite unnecessary that risks should be taken, considering the slightness of the therapeutic result and the smallness of the organ to be removed. I have made up my mind that this method will not prevail for a very long time, but that as Dr. Sewall is now doing, a safe method of enucleating faucial tonsils under local anesthesia is going to prevail.

#### PERIPHERAL ENDARTERITIS.\*

By G. B. N. CLOW, M. D., Oakland.

I desire to present to the members of this Society the report of a case in which a diagnosis of Raynaud's disease was made.

P. J. Skelton, by occupation a carpenter, aged 25 years, height 5 feet 6 inches, normal weight 144 pounds, well nourished and strong; one of a family of fourteen children, ten of whom are living. Two sisters died in infancy and two brothers at the age of 25 and 26, of tuberculosis. His father is 56 years of age and enjoying good health, excepting eczema of forehead. Mother is 55, health good.

About two years ago, a sister 28 years old began to have trouble with her fingers, the matrix becoming inflamed and swollen, the application of water making them more sore and, patient says, seemed to set them on fire. She went to the hospital and had the nails of three fingers of the right hand and the

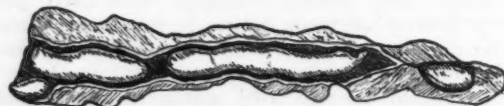
nail of the ring finger of the left hand removed. Her recovery was satisfactory. Later the nail of the index finger of the right hand became involved, requiring removal. This was done January 1, 1908; the result is not satisfactory and she expects to lose the finger.

Mr. Skelton came under my care December 26, 1907. He complained of severe pain of right hand, from which he was unable to obtain any relief. The disease first made its appearance three years ago, when he noticed that when his fingers were exposed to cold they would become white, numb and cold, the pallor continuing for an hour or so, then they gradually became hot, feverish and red. After the reaction the fingers became normal. These attacks became more frequent, the abnormal condition grew stronger and finally permanent. For three months the patient had been unable to follow his occupation and suffered severe pains, from which he could obtain no relief, night or day. The pain was worse at night and in the recumbent position. The fingers were pale, cold and bloodless most of the time; upon the pulp of the index and middle fingers was a gangrenous spot the size of a ten-cent piece, another on the second phalanx of the index finger. There was no pulse at the wrist or forearm. No pulsation could be felt until the upper part of the brachial artery was reached—the sensation and motion of the hand and arm were normal—the fingertips were hyper-sensitive and the median and radial nerves were sensitive to pressure.

The urine was found normal by examination. The blood was examined three times, with the following result:

Red blood cells .....	4,000,000 to 5,000,000
White blood cells .....	10,000 to 15,000
Hemoglobin .....	80
Polynuclear .....	79
Large mononuclear ....	7
Lymphocytes .....	13

The history and progress of this case undoubtedly points to Raynaud's disease. The pathological condition of the arteries of the hand, forearm and arm prove it to be a case of "peripheral endarteritis." The etiology of this remarkable disease is still obscure. Syphilis, gout, malaria, exposure to cold, long-continued use of alcohol or tobacco are predisposing causes. Malaria and Raynaud's disease are frequently associated. The disease is progressive, advancing from the periphery toward the trunk, the artery being gradually destroyed until a fibrous cord is left. Amputation does not always relieve the trouble, the process may continue in the stump—a peripheral thrombus appears lining the walls of the intima; this is often channeled and the blood finds its way through and as the disease progresses the vessel is finally closed. The thrombus is of the layer variety, such as occurs in aneurism. At first it is easily detached, but soon becomes adherent.



It is often several inches in length and the channel can be demonstrated for its entire length until it becomes closed. The arteries diminish in size, their coats becoming thinner and as the process advances, fibrous. No calcareous deposit takes place. A similar change may take place in the veins, usually

\* Read before the Alameda County Medical Society.



commencing later; also the nerves may undergo some change. Raynaud suggested that the local syncope was produced by vascular spasm, the asphyxia being dependent upon dilation of the capillaries and small veins and spasm of the smaller arteries. The relation between arteries and infection is no new discovery. The blood current carrying infection to the walls of the blood-vessel, this is not phenomenal when we see even the dense structure of the teeth assailed and destroyed by deleterious or germ-carrying fluids, and although at present we do not fully understand the exact nature of such pathological processes, I believe the time will come when we will know why these changes take place in the tissues of the body.

Treatment.—The first desideratum was the relief of pain. One quarter of a grain of heroin was given hypodermatically as often as required. This was gradually increased until 7-12 of a grain was given, and even these large doses did not afford relief. Quinine and iron were given internally—iodopin and salicylate of hydrargyrum hypodermatically, also nitroglycerine was given to the limit of toleration, 1-100 of a grain every hour. This remedy seemed to be of some value for a short time, but in spite of our strenuous efforts, the pain in the hand became more severe, the passive congestion more pronounced, the coldness and numbness more marked, the gangrenous spot enlarged, the patient lost his appetite and was fast losing strength. After consultation with Doctors Riggins and Fischer it was decided the patient must have relief, and it was necessary to sacrifice the arm. We did not deem it advisable to wait until nature did the amputation, or the patient became a slave to the drug habit, his vitality sapped and his resistance gone.

On January 15th, the arm was amputated at the upper third, about 7 or 8 inches from the shoulder. An attempt was made to save a portion of the forearm; the old flap operation was performed and it was found that the blood vessels had become fibrous cords, consequently no hemorrhage took place. Although no tourniquet had been applied to the arm, the circular operation was made just below the elbow joint with the same result. We did not desire to sacrifice any part of the arm unnecessarily, nor did we wish to take the chances of the disease appearing in the stump, so the amputation was made at that point where the blood vessels were normal. The night after the operation the patient slept all night, the first night's sleep in three months. He was out of his bed in four days and made an excellent recovery.

#### THE STATUS LYMPHATICUS, WITH PARTICULAR REFERENCE TO ANESTHESIA IN TONSIL AND ADENOID OPERATIONS.\*

W. HUMES ROBERTS, M. D., Pasadena.

In and about Los Angeles, so many deaths have recently occurred under general anesthesia, either during, or immediately following minor operations, such as the removal of tonsils and adenoids, that it seems advisable to look into the subject to see if such sad occurrences can be prevented in the future. The subject of deaths from anesthetics has been thoroughly gone into in the past, and, by most investigators, it has been ascribed to a condition existing in the patient which has been termed the "status

lymphaticus" or the "lymphatic constitution." I make no claims for originality for what I am about to present, but I simply wish to set forth some well established facts, in connection with the status lymphaticus, with the hope of thus refreshing the minds of all present, in order that we may be placed more thoroughly on our guard, and that we may thus prevent deaths which are bound to occur if anesthetics are to be used as indiscriminately in the future as they have been in the past. Few physicians are capable of giving an anesthetic, and no one without medical training should ever give one. Nothing is more erroneous than the idea that any one can give an anesthetic. Doubtless many deaths under anesthetics have been caused by gross or almost criminal carelessness.

This paper is to deal solely with those cases in which death has occurred when the anesthetic has been carefully administered by a proper anesthetist, and in which, in all probability, the status lymphaticus existed, as is shown in the report of one autopsy. In nearly all cases in which the status lymphaticus has been demonstrated at autopsy, enlargement of the thymus gland has been found. This enlargement, associated with the sudden death, was first mentioned by Bichat in 1723, but the connection was then apparently overlooked until 1829, when Codd called attention to it. Little notice was paid to it until 1888, when Jacobi, in this country, and Grawitz, in Germany, took it up.

In 1889 Paltauf of the Vienna school wrote, "Hyperplasia of the thymus is physiologically, as well as anatomically, an element of a general hyperplasia, and is a result of a derangement of nutrition or metabolism which also causes a degeneration of the cardiac centers." He found at autopsy, in addition to enlargement of the thymus, a hyperplasia of the entire lymphatic apparatus; enlarged nodes all over the body, of faucial and lingual tonsils, of the intestinal follicles; enlargement of the spleen and hypertrophy of its follicles; changes in the circulatory system. Here he noted a true hypoplasia: the aorta and small arteries were smaller and thinner than normal, and there were signs of cardiac dilatation.

Kolisko,<sup>1</sup> who averages some 2,000 autopsies each year, with about six of these dying from cardiac paralysis due to chloroform, says, "In these cases we always find the condition known as the 'habitus lymphaticus.' The nature of this condition is (1) a persistent thymus gland, which has often become considerably enlarged through an increase of its lymphatic tissue; (2) enlarged lymph glands; (3) adenoid vegetations in the pharynx, enlarged follicles at the root of the tongue and in the pharynx; (4) enlarged follicles in the intestines and stomach. These conditions are accompanied by acute dilatation of the heart, with no changes in the muscles or endocardium; or occasionally there is evidence of a previous cardiac dilatation, marked by the thickening in the endocardium, but not recognized clinically. There is also very frequently found a hypoplastic condition of the arterial system."

\*Read before the Thirty-Eighth Annual Meeting of the State Society, Coronado, April, 1908.

Is it possible to recognize the status lymphaticus prior to the beginning of symptoms which generally terminate in death? Many physicians, especially those of the Vienna school, claim that it is in some cases. Blumer,<sup>2</sup> quoting from Escderick, who is one of the foremost authorities, says, "The subjects of the status lymphaticus usually have a pale thin skin, a pasty complexion, and a good pad of subcutaneous fat. Frequently signs of rachitis or scrofula are present. The superficial lymph glands, especially those of the neck and axilla, are enlarged. There is hypertrophy of the tonsils, the circumvallate papillae of the tongue, and the pharyngeal lymphatic apparatus (adenoids). The spleen is often palpable." There may be faulty development of the sexual organs, a thymus capable of percussion, and an increase of the lymphocytes in the blood. We should be very suspicious, if, in addition to the foregoing, we obtain in children a history of dyspnea and laryngismus stridulus, and in adults a history of fainting attacks. It should also be kept in mind that rachitis and goitre are often associated with the status lymphaticus. It would seem reasonable to suppose in this connection that the status lymphaticus is probably the cause of the frequent deaths occurring after operation for goitre. It is thus seen that hypertrophy of the faucial and pharyngeal tonsils are among the symptoms found in the status lymphaticus. We must remove these enlarged glands, when of sufficient size to interfere with the growth and development of the patient, with the least possible risk and shock.

Blumer<sup>2</sup> says, "Individuals who are subjects of the status lymphaticus are born with an instability of the mechanism regulating the so-called 'horror autotoxicus,' at any rate, so far as the lymphatic apparatus is concerned, so that they are subject to intermittent attacks of lymphotoxemia, which may lead to reflex nervous phenomenon of various kinds, or may cause death from cardiac paralysis. During the attacks of lymphotoxemia such individuals are especially susceptible to the action of the bacterial or chemical poisons, and also to physical and psychical shocks, which at these times may cause their death under circumstances which would be trivial to a normal individual." This would explain the deaths which have occurred following the injection of remedial agents, as in the well known case of Prof. Langerhans' son, who died soon after receiving diphtheria antitoxin hypodermically. This would also explain deaths following shocks, frights, trivial injuries, or after diving into cold water.

Blumer,<sup>2</sup> in concluding his comprehensive paper on the status lymphaticus, says: "(1) The condition known as the status lymphaticus is a definite pathological entity. (2) It is probably associated with, if not due to, a condition of intermittent lymphotoxemia. (3) It may be associated with sudden death; probably, as a result of lymphotoxemia alone in some cases, or as a result of the action of toxic, physical, or psychic injuries which are rendered much more powerful than usual by the predisposing action of the lymphotoxemia.<sup>4</sup> In

some cases the sudden death is undoubtedly mechanical and due to asphyxia from pressure of the enlarged thymus on the trachea."

Olmacher<sup>3</sup> says that many deaths from status lymphaticus are due to increase of intra-cranial pressure with sudden edema, the clinical picture depending on the site of the edema, and the resulting pressure. If the external surface of the cerebrum is involved, various convulsions of the motor apparatus occur; if the floor of the fourth ventricle, sudden cardiac or respiratory failure.

Most surgeons admit that to remove tonsils and adenoids properly, general anesthesia is necessary. What anesthetic is safest? Halsted,<sup>4</sup> in an able paper read before the Laryngological, Rhinological and Otological Society at its general meeting in Philadelphia, 1900, showed clearly the necessity of performing the adenoid operation on children under some sort of a general anesthetic, in order to avoid the great shock to the child's nervous system, which would occur where no anesthetic is used, or when only cocaine is used locally. In addition to the fact that this operation cannot be thoroughly performed unless the child is unconscious, the shock would be sufficient to cause the death of any patient with the status lymphaticus, and this should condemn it. Halsted points out the great danger of giving chloroform to any child with adenoids or enlarged tonsils, whether being operated upon for them or for something else. The lymphatic tendency is most marked in children before puberty, and it is during this time that chloroform is particularly unsafe. The saying that chloroform is the best anesthetic for children is amply refuted by statistics. Chloroform is a decided depressant, and, when with children, there is added fright with violent struggling against the anesthetic, we have a combination that can readily bring on cardiac syncope in a patient often predisposed to it by the status lymphaticus. This complex is undoubtedly the cause of so many deaths under chloroform before operation is begun.

Sanford<sup>5</sup> has reported a death following the removal of adenoids under cocaine. Were cocaine more generally used many deaths would undoubtedly occur, as young children are quite susceptible to its toxic effects.

Dr. W. J. McCardie,<sup>6</sup> in a recent article, reports thirty deaths from anesthesia in which the status lymphaticus was demonstrated. These occurred as follows:

Following chloroform .....	17
Following ether .....	6
Following chloroform and ether.....	5
Following nitrous oxide.....	2
Following ethyl chloride.....	0

Total .....

Thus, in twenty-two out of the thirty chloroform was used. The youngest patient was six months old, the oldest fifty-five years. Twenty-four were under twenty years.

Dr. John Wyeth,<sup>7</sup> of New York, performs sev-

enty-five per cent of his operations under chloroform, but when operating on children he uses ether, as he considers chloroform too dangerous.

McGuire<sup>8</sup> says, "Recent investigation, however, seems to show that ether is equally as dangerous (as chloroform) under similar circumstances." With this I cannot agree.

Dr. Hill Hastings, when house surgeon at the New York Eye and Ear Infirmary, went over the record of tonsil and adenoid operations, covering thousands of operations which had been performed during a period of five years, and he did not find a death. Indeed, I believe they have never had a death from the anesthetic in this operation, and ether is invariably used.

In personal communications from Dr. E. A. Crockett and from Dr. Philip Hammond of Boston they report that they have never known of a death in Boston from ether in the tonsil or adenoid operation. I may add that, in Boston, ether is always the anesthetic used, and that the patient is placed in the upright position for the operation.

Among the thousands of operations covered by the reports of Hastings, Crockett and Hammond there must have been some operations on children with the status lymphaticus; and yet, among these reports there is not a fatal result, and all were operated upon under ether.

A few miles from Los Angeles, in a seaside town of some 10,000 inhabitants, there have been three deaths within a year; these occurred during tonsil or adenoid operations, and chloroform was used in each case.

In and about Los Angeles the following deaths have occurred as the result of anesthesia. In only one case was autopsy permitted, and in this the status lymphaticus was found. In several others there is no doubt that this condition was present, but in absence of autopsies no positive claims can be made.

I wish to thank Dr. F. D. Bullard of Los Angeles for his kindness in securing me the report of most of these deaths.

#### Chloroform.

Case 1. Boy, aged 13 years, operation, removal of tonsils and middle turbinates. The anesthetic was taken nicely, and the operation was completed with the patient in good condition. His pulse then became irregular, breathing shallow, and face suddenly blanched; after the beginning of artificial respiration, he gasped two or three times, and then expired.

Case 2. Child, operation, removal of adenoids. The surgeon had just started to remove the adenoids when it was noticed that breathing had stopped. It was then found that the heart had ceased beating. This child previously had chloroform administered for circumcision. Was this a case of intermittent lymphotoxemia?

Case 3. Child, operation, removal of adenoids. The surgeon would not reply to my letters asking for details of the case.

Case 4. Child, operation, removal of tonsils and adenoids. This case is reported in the words of the surgeon in whose hospital service it occurred. "The patient, a girl twelve years old was brought into the operating room at the ——— Hospital, anesthetized

and ready for me to operate upon. I had never seen the patient before. My memory is that she was a healthy looking girl of about twelve years of age, of medium build, neither fat nor thin. The patient was not fully under the anesthetic, so operation was delayed until the anesthetizer stated she was fully anesthetized. My recollection is that not a long time elapsed before operating and not much anesthetic given, but I was not paying attention to that part of it. I remember, however, that there was no struggling during the removal of the tonsils and adenoids. The operation itself took a very short time, I should say not over three minutes. On completion of the operation I was struck at once by the extreme pallor of the patient and the fact that she was not breathing. There was no cyanosis. I do not remember whether the pulse was beating or not, nor whether the pupil was dilated or not, or responsive to light. Artificial respiration and other measures were promptly used, but without the slightest sign of return of the respiration or the heart beat. No autopsy was secured. Chloroform was used because I had failed to tell the interne my preference for ether. The interne told me he had examined the chest and that the heart was normal. The patient had only been in the hospital an hour or two, so that nothing was known of her."

Case 5. Adult, operation, extraction of tooth.

Case 6. Woman, operation, dressing surgical wound, ether had been used at the operation.

Case 7. Adult, operation, lancing of carbuncle on the neck.

Case 8. Adult, operation, avulsion of the toe nail.

Case 9. Adult, died while preparing the abdomen for operation.

Case 10. Adult, died before beginning the operation; fear probably figured largely in this case.

Case 11. Adult, tonic spasm of the jaw, probably "swallowing of the tongue." The attendants were unable to open the mouth.

Case 12. Adult, lancing of carbuncle.

Case 13. Adult, uterine curettement at early stage.

Case 14. Adult, uterine curettement at the end of the operation.

Case 15. Adult, hemorrhoids, death occurred during dilatation of the sphincter.

#### Ether.

Case 16. Woman, age 36, death occurred from edema of the lungs, one hour after a prolonged operation.

#### Bromide of Ethyl.

Case 17. Woman, age 23, native of Sweden, operation, extraction of teeth. Three minutes after administering two drachms of bromide of ethyl, extraction was begun. One tooth had been removed with some difficulty, when the patient blanched and breathing became shallow. Artificial respiration was commenced, giving slight improvement of color, which immediately became bad again. Dr. Stanley P. Black made an autopsy, and his report is as follows:

"Body well nourished; subcutaneous fat tissue well developed. On removing the sternum, the thymus gland was situated beneath the manubrium, size 3 by 2 1-2 by 3-8 inches. Lungs normal. Heart, left ventricle well contracted, right and ventricle flabby, cavity empty, valves normal. Liver normal. Spleen somewhat enlarged. Pancreas normal. Kidneys normal. Intestinal tract; the solitary follicles at base of the tongue in esophagus, stomach, duodenum, jejunum, ileum and colon quite prominent, standing up under mucosa like shot. Peyer's patches likewise swollen. Glottis normal. Diagnosis: Paralysis of right ventricle. Status lymphaticus."

The records of the deaths of some of the patients under chloroform anesthesia have shown a history



of having successfully taken this anesthetic once, only to succumb to a later administration of it. An intermittent lymphotoxemia could easily account for this, the lymphotoxemia being in abeyance at the first, and present at the fatal administration. Whether or not death would have occurred in these cases if ether had been used it is impossible to say. We do know, however, that in most of the fatal cases cardiac paralysis occurred; and that chloroform is a cardiac depressant, while ether is a cardiac stimulant.

The status lymphaticus is most common in the first decade. Is it merely a coincidence, then, that in this decade a greater proportion of deaths occur from chloroform than from ether?

1. We should always keep in mind the possibility of the status lymphaticus being present in children who have enlarged superficial lymph glands, adenoids, or signs of rachitis.

2. In the status lymphaticus, *all* anesthetics are dangerous, but particularly chloroform.

3. In *all* operations on children avoid *chloroform*.

4. In operations for the removal of tonsils and adenoids, ether, is the safest anesthetic to use.

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#### Discussion.

Dr. F. D. Bullard, Los Angeles: Mr. President and Gentlemen of the Society—Although I reported these cases to Dr. Roberts, I am not responsible for them all. One, however, was my case. This patient died either from the anesthetic or from some other cause. I think it was shock. An autopsy was held. The patient blanched. She was not cyanosed. Artificial respiration accomplished nothing, which is characteristic of that form of death. Any anesthetic to be given in status lymphaticus should be a heart stimulant. Bromide of thyl is a heart stimulant. Then, as a rule, it is safe. Under ether the patient becomes red in the first stages at least, and in giving anesthetics in adenoid operations if you use Wyeth's hot air method of giving ether, heating it, you will only have a prolonged first stage, and the operation can be done then, and I believe there is no record of a death under primary stages of ether anesthesia. Chloroform under no circumstances should be given in any operation about the face that occasions a deal of pain, as extraction of teeth and the removal of adenoids do. I have now given anesthetics in nearly 7000 cases, and I become more and more an ether man, and do not give chloroform to children. I agree entirely with Dr. Roberts. I may give a very few whiffs of chloroform, perhaps preceded by cologne, to sort of get the patient going, but I go right on with ether, and I can get quicker results with ether than with chloroform. Then, again, the after results of ether are not so bad as with chloroform very frequently. You do not have that fatty degeneration of the liver which will come from chloroform more frequently than from ether. I believe with the doctor that only a physician should

give anesthetics, and I believe, also, a person who has had a great deal of experience, for there are five things to be watched continuously in all anesthetics, namely, the respiration, the pulse, the color, the condition of the pupil and the muscular relaxation. If you have these five things in perfect accord you are safe. If one is not good, look out. If two or three of them are bad, you are in danger. If any one of the majors is bad, look out. If with dilatation of the pupil you still have mobility of the pupil and a redness of the skin and increased heart-beat, you are in a safe condition. But on the slightest sign of blanching the anesthetic should be removed. Once in about a hundred cases, bromide of ethyl causes blanching. If they don't turn red I throw away that anesthetic. Chloroform frequently may be a heart stimulant, but it so frequently causes blanching that I have concluded to throw it out. But for quick operation never give chloroform. It is dangerous, because a large percentage of the deaths come early. Only one of the twenty deaths around Los Angeles occurred late in the operation, and that person had been on strychnia for some time and had come to the hospital and quit the strychnia, and the physicians didn't know that, and therefore was in a condition under par. That person had three times before taken chloroform. It was an adult and might have been an intermittent intoxication, as Dr. Roberts describes.

Dr. S. P. Black, Pasadena: The subject of the status lymphaticus is of extreme importance to the operating physician, and to the physician after death of a patient. In the first place, it is of the utmost importance to be able to recognize the condition. That, however, is sometimes difficult. Oftentimes we find cases in persons of robust constitution apparently. One of these cases I made an examination of. He was a strong man, sexually almost over rather than under par. He was walking along in the dark and struck his hand against a table. In two minutes he was practically dead. He was picked up dying. In that case the coroner gave a certificate of heart disease, but the subject went to autopsy, which I made, and it showed a typical case of status lymphaticus. He was about 36 years of age, but I got a history afterwards that he had been subject to fainting fits from his youth. One time he struck his knee against a chair and fell over and was unconscious for an hour. In that instance if he had had an anesthetic during one of those attacks he would have died. In these cases the surgeon is often blamed for it. In Vienna I had a conversation with Kolisko. He said that all cases dying under an anesthetic had an autopsy in the medico-legal department. If the status lymphaticus was present it was counted an accidental death and the physician was not responsible. If we can find some way to recognize this condition it would be of very great importance. We know that it more frequently occurs in children, because most of these deaths from status lymphaticus are in the adolescent. Then in children, especially with adenoids, and especially if the spleen is enlarged or the superficial glands are enlarged, we should be extremely careful of any anesthetic, and with the history of anesthetics we should use only ether. Personally, I am always afraid of chloroform. And the fact that even a young patient with this condition has had chloroform does not mean that he won't die the next time. I remember when in the hospital during my interne service a boy who had been given chloroform repeatedly in a hip-joint dressing which was extremely painful. It was given by the junior interne in any way. He seemed to be immune. But one time he was dressed and the house surgeon was giving the anesthetic, using extreme care. After three whiffs the heart stopped and the boy was dead. In those days we knew nothing about the status lymphaticus, but this was probably such a case. That shows that

previous anesthetization does not show that the next time the patient will not die. So that we should not use that argument in favor of chloroform. The responsibility of the physician is certainly very great in these conditions, and we should avoid cardiac depressants of every kind. Now it is not only from anesthetics, but from trivial injuries such as would not produce death in an ordinary adult, as in the case I spoke of where he struck his hand. Many cases reported by Poltauf, where persons had fallen into the water but didn't drown—the lungs were free from water—but died of cardiac paralysis due to the condition of status lymphaticus.

Dr. Frank W. Miller, Los Angeles: I believe this paper is of as much importance or more, and more timely, than the ones that preceded it. While there is not much that is new in the others, this is comparatively new and something we have overlooked entirely in our operative work. I personally would like to thank Dr. Roberts for the paper, because it brings up a subject worth while. I want to speak of one thing, and that is the necessity for an anesthetic in nose and throat work, particularly in children. The doctor that preceded me said that he is taking out adenoids under local anesthesia. It is not so much because of the pain or discomfort as of the sight of blood and the nervous shock the child experiences, that I insist upon general anesthesia in children, and have, since the status lymphaticus has been brought to our notice, used ether exclusively. I will say, however, that I have used chloroform in probably several hundred cases with no bad results, but since the status lymphaticus has come before us I have stopped it. I have found, also, the position of the patient, either prone or the upright makes little difference. But I have always insisted upon a general anesthetic.

Dr. E. C. Sewall, San Francisco: I think perhaps not too much stress has been laid upon the danger from chloroform, but I think too little has been laid on the danger from ether narcosis. To continue in regard to the removal of the tonsils under local anesthesia: I think the effect upon the child's nervous system is often exaggerated in these cases. The main point in the removal of the tonsils is whether you can remove the tonsils or not under your local anesthesia. In an experience covering about sixty cases I have found absolutely no untoward results in these cases where the tonsils have been removed under local anesthesia. The pain evidently is not great, as I have said, in some of these cases, one of which was only five years of age, the child returned in a couple of weeks and sat quietly while I removed the remaining tonsil. Of course I believe the child or person from whom the tonsils are being removed must not be held in any way, but must be willing to have them removed. Often simply telling the child and holding him together, as it were, accomplishes this. The use of eucaïne, as far as I know, is not accompanied by any bad results, and under its use we are certainly able to remove the tonsils absolutely thoroughly, and the danger which is present in the use of any general anesthetic is avoided.

Dr. Edward Gray, Eldridge: I do not care to go into a discussion about anesthetics, but wish to discuss the status lymphaticus, the subject of the paper. Although the subject is new, it has come before me in a practical way, and I wish for that reason to emphasize that portion of the chairman's very valuable paper. He refers specifically to the psychic states as having influence. For that reason I think you will bear with me—because these things do not occur so very frequently—while I relate the history of a case which came before my notice just about one year ago. The patient was a feeble-minded individual, 20 years of age. The feeble-mindedness was not of a very high order, but was accompanied by a partial paralysis, so that the girl was unable to

live outside of a chair. Emotional disturbances were well marked in that girl. For instance, it happened at least once or twice that when supper was brought to her and she didn't feel like taking it at that time and from that girl she got angry and threw the contents against the wall, or something of that kind.

The history of what happened relates only to twelve hours, and I wish you to take note of this. What cause is there that can produce a fever that will rise in the course of three hours from absolutely normal temperature to 105°, to 106.5°, and then fall to 103.4° and be followed by collapse and death in four hours? That is the history of a fair-faced girl with a beautiful skin and auburn hair, who but for mental feebleness would have been a delight to look at. The history was simply this: This was an occasion when she was not feeling well. One of the girls undertook to press upon the girl a certain portion of food. She flew into a passion and threw the food away. In an hour and a half the temperature went up over 104° and then up to 106°. I was called at one o'clock in the morning, and seeing she was in a desperate condition remained till four o'clock, and the uselessness of remedies was emphasized under such conditions. No amount of strychnia nor the more rapidly acting nitrate of amyl by inhalation produced a particle of effect, and about five o'clock in the morning, just about twelve hours after the seizure, she was a corpse. We had a post mortem. Going through the ordinary routine we were baffled completely, until I said to my assistant, "Let us look at the neck." Going to the neck we found a persistent thymus. That was my first clue. Then immediately we paid attention to the spleen. On section of the spleen you ought to have seen the Malpighian bodies stand out, as the American Reference Handbook of the Medical Science says, "with vivid distinctness." Then there was hypoplasia of the large arteries, not at first suspected. So that the mechanism of that girl's death was the mental and psychic shock in the first place, which led to this paralysis afterwards. This case was reported in the American Journal of Clinical Medicine.

Dr. W. H. Smart, San Diego: I would like to inquire of Dr. Sewall whether he uses a local anesthetic in removing adenoids?

Dr. E. C. Sewall, San Francisco: I refer only to the use of local anesthesia in the removal of the tonsil.

Dr. E. W. Fleming, Los Angeles: Under the head of the status lymphaticus Dr. Black has said the most trifling injury will at times produce fatal results. Now suppose we take an illustrative case. We have a patient 7 or 8 years of age who has enormously enlarged tonsils and obstructing pharyngeal tonsil, who has associated deafness as the result of hyperemia and swelling of the tube, and who has a moderate enlargement of the superficial glands of the neck; and now we will say, just for argument, that there is also a certain amount of what seems to be enlargement of the spleen. As I understood Dr. Black to say, it is impossible to determine beforehand that one is subject to the status lymphaticus. Now in that case, would you operate, and if you do operate, what method would you follow? Would you give the patient an anesthetic or would you attempt to do the operation without one? Which would apparently be the safer course? I would like to put that question to Dr. Black.

Dr. J. H. McKeller, Pasadena: I have listened with a great deal of interest to Dr. Roberts' valuable paper and agree with him on every point. I think a general anesthetic should be administered in children, and I think that it should be ether or gas and ether. While working in the New York Eye and Ear Infirmary, for a period of about four months, the invariable anesthetic given was gas followed by ether. Not only was there no death, but I did not

hear of one untoward symptom. It seems to me the great objection to the use of ether for tonsil and adenoid operations is the increased secretion of mucus in the throat which sometimes interferes with our work, but the greater safety more than makes up for that drawback. I have never seen bad results in adenoid operations under ether except in one case in the upright position. In my cases I have the patient in the recumbent position and always insist on ether being administered. I only remember having seen chloroform used once for the removal of tonsils and adenoids, and in that case the patient died shortly after beginning the anesthetic.

Dr. Cullen F. Welty, San Francisco: I am not sufficiently familiar with the subject of status lymphaticus to make any comment. I have operated cases that have had enlarged thyroids, and just the other day I removed the adenoids and tonsils of a boy of about fourteen, who had a decided enlargement of the thyroid gland. I made careful observations of this case and there is nothing to report. I am familiar with two deaths from chloroform anesthesia, one following curettement and the other following the removal of tonsils and adenoids. I do not know the complete history of either case. I never use chloroform at all because I consider it dangerous. I practically do all my tonsils and adenoids under ether anesthesia, and in the following way: Patient given a hypodermic of morphin and atropia one-half hour before operation. Primary anesthesia induced by nitrous oxide, and then supplemented by ether through Junker inhaler. Ether slightly warmed. In this way the patient gets only the minimum amount of the anesthetic. I am confident that the administration of morphia and atropia reduces the amount of the anesthetic. Furthermore, the patients are much more quiet following the operation, and this is to be particularly wished for after complete enucleation of the tonsils.

Dr. F. D. Bullard, Los Angeles: What size dose?

Dr. Welty: Dependent upon the age and weight of the child. From one-twelfth to one-twentieth of a grain of morphine, one two-hundredth to one four-hundredth grain of atropia. In regard to local anesthesia for enucleation of the tonsil in children, I will say that it is not satisfactory in my hands. They will not keep quiet sufficiently long to accomplish what I wish. In grown people I use one-half per cent solution of cocaine, in one eight-hundredth adrenalin injection into the pillars. This is for small buried tonsils. The large tonsils I prefer to remove under general anesthesia. I have come to believe, from our pathologic findings, that if you are going to operate a tonsil at all, it should be removed with the capsule, or in other words, a complete enucleation.

Dr. F. L. Rogers, Long Beach: I feel that I might with propriety add something to what the writer of the paper, and previous speakers, have said, particularly from the fact that I hail from the city by the sea, where there have been reported three deaths, in fourteen months, from chloroform administration. The first case reported by Dr. Roberts happened in my office, one year ago day before yesterday,—following the amputation of two very large middle turbinates, a double tonsillotomy and a probing of the frontal sinus. I gave the anesthetic myself and was assisted by my regular office attendant, an experienced graduate nurse. The patient, a strong, well developed boy of thirteen, was examined by me on two occasions, for heart or lung defects and pronounced normal. He had the usual preparation for operation, cathartic and no breakfast and took the anesthetic without fear or protest. Squibb's chloroform was used; less than one ounce was required to give complete relaxation. Anesthetic was withdrawn and the work completed rapidly; bleeding was moderately profuse, and pulse good at the time the operation was completed; and respiration not seri-

ously interfered with up to that time. As I stood beside the operating table, with my hand on his pulse I felt a sudden weakening of the beat and noticed a death-like pallor of the cheek; he was still breathing but it soon became intermittent and I realized there was serious trouble. Restoratives, artificial respiration, everything usually at hand were applied; two or three feeble gasps followed, but he never had a heart stroke we could feel after the first cessation of the pulse beat. I desire to call attention to two lessons which this unpleasant experience of mine teaches, and to say that I believe it cannot be too often repeated; first, that no matter how simple the operation to be performed on a child, the consent of both parents to the operation, either by word of mouth or writing, should be secured by the surgeon in advance, and then if possible have both within calling distance during the operation. In my case both parents were present and fully acquiesced in all that was done and exonerated me at the time and later both publicly and in private. I demanded that they do this, otherwise I would insist that an autopsy be held to further ascertain the cause of death. I have since regretted that a post-mortem was not held for the sake of demonstrating the presence or absence of the status lymphaticus. Second, in minor surgery about the head, particularly in adenoids, where a quick general anesthetic is required, I have for many years occasionally administered my own anesthetic, usually chloroform, and depended on my own alertness, a deft hand, and a well trained office assistant to bring my patient through safely. But since this very unpleasant experience, the first of the kind in nearly twenty years' work, I have looked with disfavor upon the practice and shall, in the future, I think, be much less inclined to take the double responsibility, that is better shared with a colleague; even though arranging for an anesthetist often results in unpleasant delays and consequent embarrassment to patient and operator. The case had no adenoids and had never had a previous operation or anesthetic. This unhappy experience came to me on the anniversary of the San Francisco earthquake, which I passed through the year before and it jarred my nerves quite as much as that. I am not superstitious, but you will pardon me for declining to operate on a case day before yesterday, (the second anniversary of the quake) and for assigning as my reason, the fact that I wanted to attend this meeting.

Dr. Geo. A. Hare, Fresno: I wish to thank Dr. Roberts for this most excellent paper that he has given us this afternoon, on a subject comparatively new to most of us probably, and entirely new to many of us. I have been more than surprised in listening to the discussion at the thought expressed by a number that all cases operated for tonsils should be under a general anesthetic. That thought, if I understood right, has been expressed by several.

Dr. H. Bert Ellis, Los Angeles: Adenoids, not tonsils.

Dr. Hare: I must have misunderstood.

Dr. C. F. Welty: I said to thoroughly remove all tonsils I believe it necessary in the majority of cases to give a general anesthetic. I referred to children.

Dr. Hare: I am glad I misunderstood. I was unable to bring myself to believe that that should be accepted as orthodox practice at the present time. I have operated in a good many hundred cases for the removal of tonsils. I formerly had a large amount of that work to do, and I have yet to give chloroform or any anesthetic half a dozen times to remove tonsils in children. I had immensely rather operate as Dr. Sewall has suggested without any general anesthetic for two reasons: First, I can reason with most children. It has been my observation that a child can be persuaded and reasoned with and operated on with as little shock as you can persuade them to take an anesthetic. I had rather reason with them, and I most always remove



one at a time and they return for the removal of the second.

A Member: Doctor, do you mean enucleation or amputation?

Dr. Hare: Both. I use cocaine and adrenalin, and while in the foreign clinics last year I found they did their adenoid and tonsil work without any anesthetics. I thought it was barbarous and think so yet. It was as much as I wanted to do to see it. I like to use cocaine and adrenalin, and while there are some features about it I do not like, I like it much better than cocaine alone, especially where I want a prolonged effect. I have been delighted with the facts brought out in the paper. It throws light on one or two cases in my experience that I confess have been enigmas to me. I believe I now have an explanation for one case that I had. I want to say in the work of Dr. Mittendorf, who uses a general anesthetic for the removal of tonsils, I saw an experience that I do not want to see repeated. It was with the utmost difficulty that the child's life was saved.

Dr. W. S. Fowler, Bakersfield: I regret exceedingly that I have to report in regard to my experience covering eighteen years, in which I have invariably used chloroform, that in the past year we have had five deaths on the operating table in Bakersfield, three from the use of chloroform. The other two had not taken a whiff of any anesthetic. Now had either one of those individuals received chloroform or ether they would have died as quickly, fright being a factor in one case and an enlarged thymus in the other, and we would have had the credit of two more deaths under chloroform. I do not like to claim to be an expert in using chloroform, but I think it requires much more care in these operations than when used in the ordinary small operations, and I believe that the experience of the profession at large is that it has not been so dangerous as appears from the discussion today.

Dr. S. P. Black, Pasadena: It is hard work to answer a hypothetical question, as is known by those who have had that experience on the witness stand. But in a case of that kind I think I should warn the parents of the child of the possible danger. I do not think we are ever justified in giving an anesthetic without giving a warning in any condition; but if they consented I should use ether if I gave a general anesthetic. I do not know how eucaine would work. As we know, cocaine produces a great many sudden deaths, and possibly these were cases of the status lymphaticus. I should not under any circumstances use chloroform or cocaine; eucaine possibly—it is on trial—or ether.

Dr. E. W. Fleming, Los Angeles: Would you operate without an anesthetic?

Dr. Black: No.

Dr. K. Pischel, San Francisco: These exceedingly interesting reports show the truth of my statement before, that operations done without a general anesthetic involve certain dangers. If I am correctly informed, death several days after from auto-intoxication is more frequent. Therefore, I think if the family asks us we have no right to say no possible harm can come from an operation. We cannot say it has nothing to do with the operation. The family will not think so. When we are called into a case such as tonsils we are not called as carpenters to cut something out, but as physicians to cure the patient and therefore it is our duty to inform them that there are certain dangers involved.

Dr. W. H. Roberts, Pasadena (closing): One objection I would have to using local anesthetics in doing tonsil work is because in the vast majority of cases where we are called upon to remove diseased tonsils there are in addition enlarged adenoids, and while we can anesthetize the tonsillar area, we cannot anesthetize satisfactorily the adenoid area. I think the shock which the child sustains through hav-

ing adenoids removed under a local anesthetic more than outbalances the shock they might have from a general anesthetic. I do not believe that we can produce sufficient anesthesia of the tonsillar area unless we inject the pillars. The little patients I see in my practice would not allow me to remove the tonsils under a local anesthetic, because when I remove the tonsils I do a complete enucleation, doing a dissection from the pillars and removing the tonsil within its capsule, with a cold wire snare. I operate invariably with the patient in the upright position, and generally by natural light. I have a north light in my operating room so that, except on very cloudy or foggy mornings, I never have to use artificial illumination. I always have the child thoroughly anesthetized before raising, and then maintain the anesthesia with a foot pump apparatus with a tube going through the nose. My anesthetist uses the Brophy apparatus and it is very satisfactory. With this there are two bottles so that none of the pure ether droplets can get into the child's throat after passing through the second bottle. The objection to ether is the abnormal amount of mucus secreted, but if we are anticipating trouble we can use a preliminary injection of atropine, the amount to be regulated by the age of the child, and that eliminates that difficulty and also fortifies the child against shock. One other thing Dr. Black spoke of, and that is that there have been many sudden deaths from cocaine; more than physicians are willing to admit. I think cocaine is more dangerous than ether, no matter how little may be used, and then with any local anesthetic there is the element of shock left, because it is almost impossible to render the operation absolutely painless under local anesthesia.

The Chairman: This completes the program, but I understand Dr. Pischel wishes to show a new instrument, and if so this is the time to present it.

Dr. K. Pischel, San Francisco: In connection with this tonsil work I take the liberty of showing an instrument which in my hands helps me in tonsil work under a general anesthetic. I find difficulty in holding the tongue depressor properly. The tongue holder slips in all directions, and so I devised an instrument which I think avoids it. It is a tongue holder constructed like a tongue depressor with a blade to put under the tongue. Then the upper blade contains a fine needle so that the tongue is held quite firmly. At the same time you can move the tongue depressor to the right or left. If one wants to operate on the left tonsil the tongue depressor is moved more to the left, and the tongue can be pulled forward as is found necessary. I would be glad to show that around and would like the gentlemen to try it. I am sure you can make some improvement on it. It is a rather rough instrument which might be improved. The blades do not come together entirely so as not to pinch the tongue too much, but they come together to within about 1 m. m.

Dr. Pischel exhibited and demonstrated the instrument.

## "THE OVER-PRODUCTION OF DOCTORS."\*

By H. S. DELAMERE, M. D., Ferndale.

In almost every number of very nearly every medical journal published in the United States, we find one or more articles, offering suggestions as to the best method of doing away with some wrong or evil, with which the medical profession has to contend. In one case we are told of the laxity of examining boards, in another of the patent medicine

\* Read before the Humboldt County Medical Society.

evil, in another of the much advertised proprietary remedies of the great manufacturing pharmacists; but in none of them do we read of the great evil; the one which is responsible for practically all of the evils with which we have to contend. I refer to the great over-production of doctors. For some strange reason, no one ever mentions this fountain head of all our troubles.

All the subjects mentioned are real evils, not only to the medical profession but to the laity as well, and all go to show the acuteness of the struggle for existence by the members of our profession.

Unfortunately the physician is compelled to eat, drink, wear clothes and find shelter the same as other people, and as society fails to furnish him with these things free of cost, it is incumbent on him to provide them for himself.

If, as is almost certain, the doctor finds himself in a community where there are more doctors than there are patients, he is soon going to be compelled to figure out a plan by which he can live; hence the resort to so many undignified and unprofessional acts.

The doctor may have started on his professional career with the highest ideals; with the noblest conception of a physician's duty, both to his profession and to the community in which he lives; but the lack of bread and the need of a new suit of clothes, becoming too pressing, he at first, outraged his feelings by what he perhaps considered to be a commercialism. That was the entering wedge. He found comfort in the money of unprofessionalism, suffering in the poverty of idealism. The next step and the next, became easier, until all ideals were shattered and we have only an advertising quack, in place of our high-minded ideal physician. He was not a weak man, an incompetent man, an ignorant man, an impractical man nor a fool. He was simply the victim of circumstances over which he had no control. There were too many doctors in the place and some one had to starve or resort to questionable methods in order to live.

How are we to better these conditions? It is very simple, stop over-production. No one burns houses in order to give contractors big prices for building other houses. Then why destroy doctors in order to give from five hundred to one thousand dollars per head to the faculty of a medical college, to build other doctors?

I think it has been generally recognized that one doctor to one thousand people is an ample supply, and as far as I can learn, the medical colleges convey the impression to their victims that there is no difficulty in finding places where that proportion of doctors to population exists; but there are no such places. We have from three to six physicians where one is needed, and still they come, more and more. Los Angeles county, California, with a population at the last census of 170,298 shows in the register of 1907, 741 doctors instead of 170.

All our legislation has done nothing for the doctor, except to rob him of his liberty as a citizen, to go where he pleases to work for an honest living. The only parties who have benefited are the medi-

cal colleges, and it is they or their friends or representatives who have framed all our medical laws. In their interest every old practitioner who can be eliminated from the profession is worth from five hundred to a thousand dollars in tuition fees.

It is the great number of these colleges which is the cause of the whole trouble. It is absolutely impossible to keep up all these medical colleges and to furnish a profitable number of pupils to each, without producing far more doctors than can possibly find localities in which to make an honest living.

We need the legislation to correct the medical college evil, instead of to prevent the graduate of the college from following the profession in which he thinks he is educated. If we can force a proper standard upon the college, the graduate will soon be able to take care of himself. In California I believe we have eight or nine chartered medical colleges and almost every state in the union, according to population is similarly encumbered. The state of California should have just one medical college. That should be a good one, would be all sufficient, and should be under state supervision, as should every medical college in the land.

The medical college evil cannot be entirely corrected by legislation, it would be impossible for the profession to combat the colleges in the various state legislatures. What might be done, however, is for the American Medical Association, aided by the state and county societies, to adopt a by-law that every medical student shall study at least one year in the office of a legally qualified physician before he be permitted to enter a medical college. The great weeding out process would then take place in the physician's office and thousands would there abandon the study of medicine for other pursuits. Then let the doctors of each state select by vote, taken in the county societies, one medical college to which they will recommend their students, let all be loyal to the majority vote and the colleges which cannot be legislated out of existence will have to close for want of victims to pay tuition fees. When we get the colleges reduced to one in each state and the students reduced to the number who can show a member of the medical profession their natural adaptability to the healing art; there will be no trouble with quacks, and but very little from the other troubles which beset the path of the honorable physician, and the public will be ridden of an army of suffering victims, of the avariciousness of the "leading" physicians who run medical colleges for tuition fees and the advertising they get as professors of those colleges.

All our legislation deals with the poor victim after the medical college has got his last cent. Instead we should have laws dealing with the colleges, compelling each and every one of them to do its whole duty by each student and inflicting a penalty on the college that graduates a student who can not pass the state examinations, also a law to punish the doctor who would give a certificate of study to a student who had not completed his full year of study in his office. Provision should also be made

by which the state educational authorities should be represented at the examinations for the medical degree and that degree once granted under such safeguards should enable the man who graduates in one state to practice in any other state, without being further troubled with examinations.

Let us reduce the number of medical colleges to one for each state and we will soon have uniform laws in all the states and the man who is a physician in California will be the same in Oregon, Massachusetts or Maine.

One other thing that the American Medical Association should do is to send circulars to all the high schools, giving the graduates correct information as to the exact condition of the professions of medicine and dentistry. Let the pupils know that the only possible hope for them to earn even a very modest living in those professions is through the downfall of some one else. A united effort on the part of the profession along these lines would soon eliminate the superfluous medical colleges as well as their superfluous students and place the whole profession in a position of respectability, at the same time relieving the general public from the unnecessary burden of maintaining an army of superfluous doctors.

This, gentlemen, is far from treating the whole subject involved. It would need a book and not a mere hasty paper; but I hope some of the ideas here expressed, thus imperfectly, and feebly, may furnish food for thought.

### THE UNDERLYING PRINCIPLES OF ANTI-PLAGUE MEASURES.\*

By RUPERT BLUE, M. D.; P. A. Surgeon, U. S.; P. H. and M. H. S., San Francisco.

In a previous paper the technic of a plague campaign was discussed. In this article it is proposed to deal with the reasons for the measures previously indicated.

If the basic principles affecting the spread of any disease among the lower animals and the mode of conveyance, to man are well understood, the task of eradicating that disease consists simply in the logical application of this knowledge and the measures to be deduced therefrom. Prior to the discovery of the mosquito-transmission of yellow fever we could limit in some measure the spread of that disease but we did it at enormous expense of money and energy, for we were fighting in the dark. Since Reed's epoch-making discovery, the complete eradication of yellow fever, has become a comparatively easy and inexpensive matter. While this is not wholly true of plague, for we still lack much knowledge of the disease, the simile is not badly taken, and it is hoped that a thorough discussion of the *raison d'être* of anti-plague work may prove profitable to all of us.

The two fundamental factors in the spread and continuance of plague are the rat and the flea. It is therefore apparent that the partial solution of the

problem of the eradication of pest must lie in the study of the habits and life history of the animals and insects liable to have and to spread the disease, and the application of the facts acquired by such study. Let us first consider the rat.

We have found in San Francisco the *mus decumanus*, or large gray Norway rat; the *mus rattus*, or black Indian rat; the *mus Alexandrus*, or red rat, and the *mus musculus*, or common mouse. The following is the percentage of the different varieties:

<i>Mus decumanus</i> .....	80%
<i>Mus rattus</i> .....	6.8%
<i>Mus Alexandrus</i> .....	.2%
<i>Mus musculus</i> .....	13%

In addition to the above a few hybrids, a cross between the *mus decumanus* and *mus rattus*, have been found. Their number is so insignificant, however, that they need not be considered further.

It would be logical to expect that the chances of infection would be greatest in the *mus decumanus* on account of their overwhelming numbers and wide distribution, and this is found to be a fact, for only a few infected *mus rattus* have been discovered, and no infected *mus Alexandrus* or *mus musculus*. The *mus decumanus* is so much larger and fiercer and exists in such large numbers that there are only a few places in San Francisco where the *mus rattus* is found and the *mus Alexandrus* is rarely captured. The *mus musculus* lives in very small holes and does not come in open competition with the *mus decumanus* or else the mice would also be reduced to the minimum by the gray rat. I believe this condition of affairs exists in almost all American coast cities so the only rat to be considered, in an urban plague campaign, is the *decumanus* or Norway rat. In the country, especially in California, the animals to be taken into account are the ground squirrel and the gopher, and to some extent the field rat.

We have found in our work that a rat-run usually branches like a Y. At one extremity of the fork is a little store-house in which may be found corn, wheat, pieces of bread and apple cores. At the other end is the nest made of rags and feathers laid on straw or hay and offering an ideal breeding place for fleas. This display of ingenuity and foresight gives us a clew to another characteristic of the rat, namely, his sagacity. There is no need to dwell on this point, which is well known to every one, further than to call attention to the fact that when man begins to fight the rat it is a battle between the intelligence of the one and the instinct of the other with the advantage not always on the side of the former. The rat is a subterranean animal by force of circumstances and leaves his home chiefly in search of food and water. In cities his great highway is the large sewer which also furnishes him with protection, food and drink. It is the migratory rat, traveling as a rule by way of the sewers, which spreads the infection of plague in this city. The mouse, a household animal, is non-migratory, and although some thousands have been

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examined, not one has been found infected. Measures, therefore, tending to prevent rat migrations by this and other routes should be undertaken with the least delay. The large brick and mortar sewers should be carefully inspected inside and out, and all holes and runs affording ingress and egress to rats should be sealed. Runways beneath board walks and under fences, which permit travel from house to house, should be destroyed.

The fecundity of the rat is proverbial and on account of the extreme rapidity with which rats will increase, their extermination by trapping and poisoning alone is a difficult and expensive process. While this means of extermination is important it should never be attempted without a coincident abolition of the rats' food-supply and habitation. The former is accomplished by the rigid enforcement of ordinances covering the collection and disposal of garbage, the screening of all places where food is stored, the rat-proofing of restaurants, markets, stables, warehouses, and ground floors with concrete and cement, frequent sweeping of the streets and cleansing of all premises and vacant lots. It will be observed that cleansing in plague sanitation means the destruction of rat-food and rat-habitations. To accomplish the latter, it is necessary to search for rat evidences and rat harboring places in all premises. These will be found chiefly in and around stables having wooden floors and faulty manure bins and feed boxes, in fact, under any place of wooden foundations. The brick debris of the great fire and the lumber of the builders of San Francisco have furnished ideal breeding places for rats. Every place of human occupation must be rendered permanently rat-proof if the disease is to be eradicated for all time from the infected city. This is not the work of one season alone but should be made a continuous improvement enforced by strong building laws. In other words, the disease must be built out of existence. This is the hope of San Francisco and in time that city will be one block of concrete throughout, and the gateway to the Orient closed against plague.

The starved and homeless rat takes poisons and enters traps more readily and this brings us to the second phase of the subject; namely, trapping and poisoning. Rats are extremely wary animals and enough cannot be caught by inexperienced men to greatly reduce their numbers. It therefore becomes necessary to place intelligent men at this task and to train them carefully in their duties. A man can no more be made a rat-catcher by giving him a rat-trap than he can become a soldier by being provided with a rifle. Those interested in the technic of rat-catching will find an article on the subject in the Public Health Reports for February 28, 1908. Poison, when used, should be intelligently placed so as to be inaccessible to children and domestic animals.

The rat-fleas found in India show a great preponderance of the *pulex cheopis* but in San Francisco the *ceratophyllus fasciatus* is in the majority. The

percentage as we have observed it has been as follows:

<i>Ceratophyllus fasciatus</i> .....	79.2
<i>Ctenopsylla musculi</i> .....	6.7
<i>Ctenocephalus canis</i> .....	.8
<i>Pulex irritans</i> .....	7.6
<i>Pulex Cheopis</i> .....	5.6

It should be borne in mind that these percentages are subject to great variation.

While exterminating the host, a great deal can be done to limit the number of the parasites. The rat nests, wherever they may be found, under wooden floors, in hollow walls, or in the yards, contain countless numbers of flea eggs. For my part I do not believe the rat-flea breeds to any great extent in the sand of the street and the vacant lot, but that his natural habitat is the nest of his normal host, where the eggs are deposited during summer and autumn. If nothing interferes these eggs hatch the following spring and summer and the adult flea attaches himself to his chosen host on the advent of the first warm weather. If these nests and burrows could be destroyed during the off season of plague, millions of possible plague-carriers would be eliminated. These nests should be uncovered and their contents burned. Flooding the holes with a strong carbolic acid solution, creosote, or chloronaphtholium is also recommended as a reliable measure. This is one of the reasons why we have torn up board walks, cellars, stable floors, backyard coverings, etc. The floors and carpets of theatres may be sprayed once or twice a week with some reliable insecticide. Such solutions often contain carbolic acid and may be objectionable on account of their odor. Carpets and rugs should be taken up and beaten in the open air and sunned at least twice in the flea season, between April first and September first.

The seasonal prevalence of plague is coincident with the season of greatest activity of the *ceratophyllus fasciatus* and *pulex cheopis*. The flea does not breed in the cold wet months and it is at this time that they are fewest upon the rats. Last January twenty rats were combed before a single flea could be found. By the first of February the average was two fleas per rat and this number gradually rose to 4.6 on March 1st and is now about ten per rat. Last September when the number of human plague cases was greatest the rats showed about thirty fleas each. Thus we see that human-plague prevalence is directly as rat-flea prevalence. In the face of this comes the apparently contradictory fact that plague among the rats was greatest when the number of fleas and the number of human cases was at the minimum. In winter the rats' food supply is at the lowest point and the cold wet weather makes them loath to leave their burrows in search of sustenance. It is then that they begin to eat one another and as the sick rat is least able to protect himself, he is the first to become a prey to the stronger members of his tribe, and those who partake of his infected tissues become in turn infected, thus spreading the disease in the geomet-

rical ratio. In addition to this, the cold rats huddle together and if there be but a single flea present he may infect the entire number. We have here the explanation of an active epizootic of plague during the quiescent period of epidemic plague.

While plague may prevail among human beings in San Francisco throughout the year, its season of greatest prevalence begins in August and continues until the end of October. From January 30th to April 21st, although there was a large percentage of infection among rats captured in densely populated sections of the city, no case of human-plague occurred. In some districts the infection ran as high as 1½% of the rats examined. That epizootic plague is not always followed by epidemic plague was observed in Childers, a small town in Queensland, Australia. In 1905 nearly the whole rat population died off and only one human case occurred. In Cardiff (1901) a large rat mortality was accompanied by only one human case (Burnet Ham). There is one notable instance on record, namely, Glasgow, (1900) where epidemic plague was not preceded by a plague mortality among rats. This may be accounted for by the fact that rats often seek inaccessible places when sick, and unless a careful search is made in such places no cadavers will be found. This digression is simply to show the need of exterminating rats in the winter when there are few fleas. Second, of destroying their habitations in order to lessen the number of fleas as well as the number of rats.

Passing from the consideration of rodent-plague let us now take up human-plague and the way in which its various forms affects the problem of its eradication. On account of improved hygienic conditions, personal cleanliness, etc., human agencies do not play as important a role in the dissemination of plague in Occidental countries as in the Orient. We also know that human transference, except in the pneumonic form, is relatively infrequent among persons free from vermin. In the absence of the pneumonic and eruptive forms of the disease we may concentrate our forces on the destruction of the rodent and his parasites. The purely bubonic form is practically non-contagious from man to man, and if there are no suctorial insects present the same may be said of the septicemic cases.

The pneumonic cases are very contagious. For the first two forms fumigation and disinfection are done to kill fleas and other vermin; in the latter, to kill the bacillus pestis as well. In the uncomplicated bubonic cases the aim is to destroy the original infecting agent and not something which the patient himself has created. This means that the place where the disease was contracted is to be subjected to thorough fumigation. It should not be forgotten, however, that a bubonic case may secondarily become septicemic or pneumonic, and for this reason should be kept under constant observation. All cases should therefore be removed to a hospital situated in a rat-proof compound.

The fumigation of buildings and sewers for the purpose of killing rats has proven a futile measure, as the rat has already provided a means of escape

and is simply driven out. Agents for patent methods and proprietary disinfectants do not understand this principle and often propose costly schemes for the fumigation of buildings and sewers to kill rats.

Plague may appear in many forms, and for this reason the busy practitioner with very little time for microscopic work may overlook atypical cases. In order to rectify mistakes in diagnosis, experts should be employed as inspectors of the dead and no burial permitted without a certificate of inspection. The expert will order a postmortem examination in all doubtful cases, as experience shows that numbers of atypical pest cases come to necropsy under such diagnoses as typhoid fever, pneumonia, appendicitis, acute nephritis, meningitis and abscess of the internal organs.

The immunization of large numbers of the population has yielded good results in India, and this protective measure would therefore seem to be indicated here. It is doubtful, however, if this will ever be practical in America. In a republic where many people object to such slight inconvenience as is caused by vaccination, few persons would submit to Haffkinization, which is sometimes followed by a severe reaction, and only protects for six months. Further, plague has not been sufficiently widespread to warrant the use of this measure.

If a plague campaign is to be successful in the broadest sense, it is necessary that the general public be educated as to the danger of plague, and the means of avoiding it. This is especially necessary in America, which has never experienced the frightful epidemics that have taken place in other parts of the world and the people do not realize what a menace plague is. A campaign of education is, therefore, one of the basic elements of success. The people must be approached in the easiest way and addressed in their own language. This means, reaching them through the improvement clubs, the neighborhood organizations, the church and special mass meetings. These meetings to be addressed by men capable of speaking on the subject and explaining in simple terms the means of spread and continuance of plague. This measure has been carried out with remarkably good results in San Francisco. The citizens have organized themselves into a sanitary committee and have given a tremendous impetus to this branch of the work.

Too much stress cannot be laid upon the necessity of having a trained force ready at all times to combat epidemic diseases. In San Francisco, as elsewhere, much valuable time was lost in training men to do ordinary labor necessary in all large sanitary operations. If the campaign had been begun with a force drilled and trained in the application of sanitary measures and well disciplined in the execution of orders, the epidemic might have been checked in half the time. The time has come when we should have a standing sanitary corps of trained men ready to take the field against any epidemic disease. Such an organization would pay for itself many times over in the saving of human life and the prevention of expensive quarantine.

## OBSTETRICAL REMINISCENCES.\*

By H. E. W. BARNES, M. D., Santa Ana.

"We pass the paths that each man treads, is green or will be green with weeds."

Knowing that "variety is the spice of life," it occurred to me that obstetrical reminiscences gleaned from thirty-five years' experience on the firing line in the middle west ought to be of interest to the younger members of this Society, and I trust the discussion will bring to the surface the rich store of similar experiences that are etched indelibly on the walls of memory of the old veterans that I have the honor of addressing and all this "lest we forget," for the old doctor, like the old soldier, is prone to "shoulder his crutch to show how fields were won" or lost as the case may be.

This recital will of necessity be of a personal character, partaking to a degree the nature of "Tales of a Grandfather." The ideal obstetrician should have the strength of Samson, the patience of Job, the wisdom of Solomon, and a knowledge of human nature that was possessed by Hugo, Dickens, and Shakespeare, in addition to a thorough knowledge of the entire subject, and a natural resourcefulness to meet and overcome emergencies that often "come not single spies but in battalions." Therefore I conclude that the personal equation is the prominent factor, and being "short" on all these qualifications in a new, sparsely settled country in Illinois at the age of 21 years, my first case was obstetrical. A normal labor, except that the umbilical cord was wrapped five times around the neck (a condition that I have never seen since) giving me the impression that they came in reels like spools of thread.

A short time after this, I was called several miles distant one summer night to the home of an influential and wealthy farmer. I well recall the horse I rode, a nervous, high-mettled fellow, who shied and bucked when a flock of startled prairie chickens whizzed out from under his feet and my saddle bags as suddenly and unceremoniously shot out from under me and promptly lit in the grass vacated by the chickens. By the aid of lighted matches, I recovered them, and went ahead. On arriving at the house I found that his daughter was very sick in bed with "colic" (that was their diagnosis). She was surrounded by ears of boiled corn, each ear wrapped in flannel, and was in a profuse perspiration. I observed that the pain was markedly spasmodic, also that during the spasm of pain she had a strong tendency to hold onto things within her reach. I found she was single and her mother in attendance. Here was a perplexing dilemma for a sappy doctor. If it was the colic and I should hint at anything else, I would be bodily "fired" and forever disgraced in that neighborhood. On the contrary, if it was not the colic and I did not make a diagnosis, they would soon demonstrate that I was as ignorant as I looked to be. It was then I

"longed for the touch of a vanished hand and the sound of a voice" that wasn't there—my professor of obstetrics. I wanted time and a private interview with the party of the first part, so by a ruse I sent her mother to the kitchen to prepare some strong ginger tea; then I "crossed the Rubicon," and boldly said to the daughter, "you certainly know what is the matter with you, don't you?" She said, "well, I thought I might be in a family way." I then made a hurried examination and found the head resting on the perineum. When her mother returned I told her the truth. She left the room completely collapsed, and I was left master of ceremonies. When the head was delivered, and before I could extricate the shoulders, the mother of the child raised herself and struck a vicious blow at its head. This I countered with my left arm, and forced her back onto the bed, and told her that wouldn't go with me. She then offered me \$500.00 to destroy it. This I declined with thanks. I realized that she was in a frenzy and hardly accountable for her actions. I quieted her by telling her that they could send the child to an orphan's asylum. I remained until I considered her physical condition all right and left. About a month after this, I met her father on the road. Making inquiry in regard to the case, he informed me that his daughter had recovered, but during the wet weather the child had taken cold and died(?).

Did we use antiseptic precautions in those days? We washed our hands often in a wash pan that had been in service for years and with a piece of soap that in months of use showed but little erosion. Then anointing the finger with lard that stood ready for the doctor in a tablespoon side by side with a piece of string and a pair of scissors. Yes, we treated the cord antiseptically in a way, i. e., dressed it with a scorched linen rag. The origin of this procedure is lost in the mist of antiquity. No case of any particular interest occurred to me until a few years after this. I was then in practice, associated with my brother Dr. S. M. Barnes and Dr. N. T. P. Robertson in Fairbury, Illinois. One cold, stormy winter's day Dr. Robertson was called sixteen miles into the country to an obstetrical case and I accompanied him. We went in a sleigh. Arriving at the house and while warming ourselves at a stove, they asked the doctor if he wanted to see the baby. He replied, "I will make an examination as soon as I get warm"; so they went into an adjacent room and returned with a box. In it was the body of a large child, minus its head. We soon found that a large muscular Amazon, an alleged midwife, was in attendance on the case. One of the tribe that "don't have no use for doctors no how." There had been a foot presentation, and when she learned that a physician had been sent for, she proceeded to put on the "high gear," and absolutely severed the body from the head. We found the head in the uterus. I gave chloroform, and the doctor by external and internal manipulations brought it into proper position, and by long and tedious work succeeded in locking a long Hodge

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forceps on the head and delivering it. The mother made a good recovery.

Another case will serve to illustrate the necessity of adaptability to environment. One stormy evening late in October, I was called into the country to attend a case in a one-room shack located in a small clearing in the deep woods. The children had been distributed in the neighborhood. The husband was present, and two old ladies, one with chronic rheumatism and the other a confirmed asthmatic. About 10 p. m. we gradually went into cold storage. The fire had gone out and so had the husband. I inquired in regard to the strange disappearance of the head of the house at such a time, and was informed by his wife that "Abe never could bear to see me suffer," and had gone for the night, having by former experiences learned to avoid the great mental suffering and acute anguish of soul that these frequent and harrassing ordeals entailed on his sensitive nature. As there was no wood in the house, I enquired into the probable location of an additional supply that had no doubt been amply provided by this remarkably tender-hearted man, but found that the wife was not informed on matters outside of her own department. This was interesting. I found a lantern and sallied forth into

"That night a child might understand,  
The de'il had business on his hand,"

and found no cut wood, but a dull ax, and in the adjacent woods, a tree top. This I attacked, and soon had enough wood cut to go through the night. About daybreak another scion was added to this home, and the question of race suicide happily averted. About "sunup" Abe came home smiling and hopeful. His wife kissed him and said she was mighty glad he hadn't been there, as she didn't think he could have stood it.

"O, woman in your hours of ease,  
Uncertain, coy, and hard to please,  
When pain and anguish wring the brow,  
A ministering angel, thou."

Fidelity like this is the bulwark against race suicide, and sends thoughts of divorce courts glimmering in the gloaming. I evidently made a fine impression on my assistants, for in a few days the woman with chronic rheumatism sent her tow-headed boy to town on a mule to ask me which she had better buy, a bottle of Hood's Sarsaparilla or a bottle of Kennedy's Medical Discovery, as she couldn't tell to save her soul which was the best. It is little confidences like this that encourage the belief in the mind of the struggling medical tyro that altruism is to be preferred to egoism.

A short time after this, another dark and rainy night, found me eight miles in the country in attendance on another case. I found a head presentation and a cold, prolapsed, pulseless cord. I had no instruments with me. I decided that the indications were to deliver this woman as rapidly and expeditiously as possible. Out in the workshop I found a thick wire. This I cut and bent into a fish-hook shape, filed the end sharp, wrapped it to near the point with old muslin, anointed it with lard, intro-

duced the point between the sutures, evacuated the brain, and removed the child and, went home. Fortunately, the woman recovered. My partners, while ostensibly approving of my successful operation mildly suggested that "a decent respect for the opinions of mankind" would be better conserved by calling for consultation and the use of well known and less primitive instruments. My egotism received a severe jolt but I learned my lesson, and never attended another case without being properly equipped.

About twelve years after this I was in practice in Iowa, and was called to see a case that occurred in the practice of my partner, Dr. Rawls, of Creston. The patient was an old primipara who was married to an aged man. This may account for the extreme ossification of the cranial bones of the child. It had a small bullet-shaped head that tore its way through the tissues to the left of the vulva, leaving the vulva intact, making a ragged wound. This the doctor repaired but septic infection followed and she had a long and tedious convalescence.

A few years after this I was called by a physician of experience to a neighboring town to do a craniotomy. The patient, a muscular primipara about 30 years of age, had been in labor for 36 hours. The physician had made a diagnosis of contracted pelvis and a dead child, and so announced to all concerned. I found pulsation of the fetal heart; a very large child; head presentation; as fully dilated, and believed that the apparent pelvic contraction was due to extreme muscular development. I refused to do a craniotomy, believing it to be a forceps case. The physician in charge "stood pat" and we disagreed. The husband decided that I might try the forceps and the physician reluctantly gave chloroform. After over an hour of hard tedious work, I delivered her of an apparently still-born boy, but by long and persistent artificial respiration, succeeded in resuscitating him. He has since grown to manhood, and his mother made a good recovery. This simply illustrates the fact that it is not always best to make a positive diagnosis in a doubtful case.

In the year 1893, a rare case of congenital malformation, complicating labor, came under my care for the second time. I kept full notes of this case at the time, as I should have done in all cases deviating from the normal. This lady was 33 years old at the time of her last confinement; she was perfectly formed, excepting that the rectum terminated in the vagina about two inches from the vulva; her weight was 165 pounds. This was her third confinement—the two previous ones necessitating the use of forceps—the first child living but a few months, the second, owing to the large size of the head and the compression required to effect its exit, lived but a few moments.

Her first confinement was conducted by another physician. She came under my care in the second, and when I was requested to again take charge of the case I was constantly in great trepidation until the labor was over. As the fecal discharges passed through the vagina the lower part of the

vulva partook of the nature of an anus more than of a normal vulva, hence when the head passed through the straits, it rested on the perineum, if it could be so termed. In her second labor the parts were so unyielding and tense that it was impossible to perceive any distention and the head of the child had to be crushed sufficiently to pass through this outlet. In the second labor she made a good recovery. I submitted the case to eminent gynecological authority with a suggestion to cut on each side of the vulvo-vaginal opening when the head rested on the perineum. They sanctioned and approved of the procedure. I submitted the proposition to the lady's husband (a very intelligent gentleman) who was perfectly willing, but no amount of persuasion could overcome the prejudice of his wife against any operation. Therefore, when I was called to attend her a second time, it was with the same feelings I had when I was called to my first confinement case.

The bowels were thoroughly evacuated before the labor began; the vagina disinfected, the labor came on rapidly, the head passing down and resting on the perineum in a much shorter time than in the second labor. In the same position where the second child became impacted this head came to a standstill. The uterine contractions were frequent and powerful. After a close examination I believed we had a smaller head to deal with than before. I applied the forceps and lifted the head up and out without any crushing efforts. The child (a girl) was born with no injury to the head. There were a few abrasions, as I afterwards discovered, of the mucous membrane at the posterior part of the vulvo-canal opening. The placenta and all the membranes were readily removed. I thoroughly disinfected the vagina with a one two-thousandth solution of bichlorid of mercury and felt that "all's well that ends well." But on the fourth day a chill supervened, the temperature ran up to 105°; she had delirium. I immediately washed out the uterus with negative results. The bowels had moved the second day but her husband had washed out the vagina thoroughly after each operation with bichlorid of mercury, one to two-thousand. I examined the vagina and vulvo-anal opening and found small abrasions in the mucous membrane that had a dry inflamed appearance. I believed then and do now that the discharges from the bowels passing over this abraded surface were absorbed and produced the infection. I applied a saturated solution of silver nitrate to the abrasions and considered the proper constitutional treatment to pursue. Should I give epsom salts? If I did not could I combat the violent peritoneal inflammation? If I did, I would be constantly pouring into a puerperal vagina a sewer of infection. Should I escape Scylla would I be wrecked on Charybdis?

I elected to administer the epsom salts and gave a saturated solution of half ounce doses every fifteen minutes from 4 p. m. until midnight. The discharge from the bowels at that time was watery, the temperature gradually came down and by noon

of the fifth day was normal. After each and every discharge from the bowels her husband thoroughly irrigated the vagina with a one two-thousandth solution of bichlorid of mercury.

Sulphate of quinine in six grain doses was given for twenty-four hours, every two hours, and from one-half to one ounce of brandy every half hour, in all twenty-four ounces of brandy the first twenty-four hours. These doses were all gradually decreased; the second and third days one-half to one ounce of cold water was given as often as asked for, and that was every ten or fifteen minutes for the first twenty-four hours. She improved rapidly excepting an abscess formed on the left breast. I evacuated the pus and washed out the cavity with peroxide of hydrogen. The breast gave us no further trouble and she made an uninterrupted recovery.

Here was a case where vaginal injections seemed to be imperative and necessary, a procedure that in ordinary cases I regard as unjustifiable, meddlesome and dangerous. The mother and daughter are alive to-day, the latter a handsome young lady of 15 years.

I was called to see a case in Iowa in consultation with Dr. W. D. Christy then of Shannon City. The doctor has kindly furnished the following history. prior to my association with him in the case:

"I was called on the night of February 23, 1894, to attend Mrs. W., a farmer's wife, age 35 years, multipara, German. Found her having regular labor pains. Os high up. No presentment or dilatation. Anterior and upper part of vagina filled with what felt like a cauliflower growth, making it somewhat difficult to locate os. Was and had been having a slight discharge for several days, prune juice in appearance, with little if any odor. Found she had quickened, September 11th. Previous confinement some six or seven years prior; was tedious with instrumental delivery, and protracted convalescence caused by post partum hemorrhage. After waiting an hour or two with no increase in strength of pains or progress being made, gave her some quinine, which increased the strength of contraction for an hour, then gradually subsided and stopped at the end of five hours without any apparent progress having been made. Seven days after, pain returned and lasted about an hour with no result. On March 7th, I called to see her, and gave her a careful examination. No movement or pulsation discernable. On March 20th, cauliflower growth had entirely disappeared. Mucous membrane smooth and natural to touch. Discharge the same. Complained of sharp stinging pains in sacral region. Bowels constipated. Urine scanty and irritating. Both troubles relieved by small doses of cascara and buchu. But no return of labor pains after March 7th. There was a gradual decrease in size and weight of patient from March 1st, at which time she was a plump, healthy looking woman."

May 21, 1894, I saw her and found the os uteri completely obliterated. Under anesthesia and

proper antiseptic precautions, the doctor making counter pressure on the fundus of the uterus, with my fingers and thumb, I gradually forced my hand through the tissues and into the uterus. I found a very large mummified fetus that I removed by podalic version. During this maneuver, while removing the head, the uterus was torn from its posterior attachment to the vagina. The membranes were very thick. No liquor amni. The fetus weighed ten pounds. Strict antiseptic precautions were carried out in the after treatment of this case, and beyond a slight raise in temperature the second day, she made an uneventful recovery, and was doing her work in six weeks. She was then examined by the doctor who found a contracted Douglas cul de sac from cicatricial tissue.

On the film of years I see moving pictures of a doctor lost on a trackless Iowa prairie in a howling, merciless blizzard on his way to attend an obstetrical case; of eclampsia, eight cases. One a mother at term with her seventeenth child. (All the mothers recovered and all were bled.) Pernicious vomiting of pregnancy, 2 cases; both died. Placenta previa, 3 cases; these mothers recovered; children still born. Postmortem hemorrhage, no record kept. Of number of forceps deliveries, about 10% of all cases, and presentations of every kind possible.

I have always used the abdominal bandage and in late years the rubber gloves, as you can boil the gloves and you can't boil your hands. I use chloroform in almost every case pushed to the point of light anesthesia.

A labor case is a psychical and mechanical problem and fortunate is the practitioner who, having confidence in his own knowledge and ability involuntarily so impresses the mind of the patient that she cheerfully acquiesces in the directions given her and has implicit confidence in him. Call it hypnotism or what you will, the mind of a woman in labor is in a peculiarly susceptible condition and she is soon either "en rapport" or disgusted with her attendant.

"Every pilot can steer the ship in calms, But he performs the skillful part who manages it in storms."

### PLAGUE.

Being a translation of the Fourth Chapter of "La Pathologie Exotique," by Professor A. Le Dantec of the Faculty of Medicine, Bordeaux.

Translated for the State Journal by Dr. W. C. RUCKER, P. A. Surgeon, U. S. P. H. and M. H. S.

(Continued from July.)

Haffkine's prophylactic may be prepared extemporaneously by the use of a culture upon agar instead of a culture upon bouillon. Two days suffice in this case. The bacillary puree is obtained by scraping the tubes of agar which is diluted with sterilized water and is afterward heated to 70°. Noc has used this method in New Caledonia, injecting ½cc at a dose.

We will consider in our chapter on treatment the results which have been obtained by injecting Haffkine's prophylactic in the prevention of plague.

Anti-pest material of Lustig and Galeotti. The two authors have modified the preparation of prophylactic lymph in the following manner: they cultivate the pest bacilli on gelatin plates, dissolving the cultures in a solution of caustic potash 1%, precipi-

tating the nucleoproteid substances thus dissolved by a weak solution of acetic or hydrochloric acid, collecting the precipitate, washing it and drying it completely. This substance seems to be able to remain active indefinitely. The dose for a man is about 3 gm, which is dissolved in a sufficient quantity of a carbonate of soda solution, 50 gm. per hundred. The subcutaneous injection of this dose provokes a very marked, local and general reaction (Manson.)

Anti-pest vaccine of Yersin and Carre. The resistance which the Asiatics have opposed to the preventive injection, namely the anti-pest serum and Haffkine's lymph led Yersin to search for a procedure which would be applicable like Jenner's vaccination. With the assistance of Carre he tried at Nha-Trang to obtain an attenuated virus. He had at first ascertained that by the great age of cultures it was possible to have strains of pest bacilli possessing all the degrees of virulence from bacilli killing the rat in forty-eight hours to organisms which would not kill the rat at all. They found cultures which would kill 80, 50, 20, 10 per cent of the inoculated animals in times varying from 4 to 15 days. After long search, Yersin and Carre obtained a pest bacillus which did not kill more than 20% of the rats inoculated and which they called *Bacillus C*.

The germs, totally deprived of their virulence, would not vaccinate, but the feebly virulent pest bacilli would. A perfect immunity was acquired in about fifteen days. Did it persist? One experiment of three months is not enough upon which to base conclusions. The organism which killed 40-50% of the rats was inoculated into apes, which presented only a passing malaise and were finally resistant to virulent bacilli. Yersin inoculated himself with the *Bacillus C*. without other accident than a slight stiffness in the joints, and fever.

These inoculations are made with a lancet as in Jennerian vaccination, and this is the principal advantage of the method, that there is greater chance of its being accepted than when injection is used.

Anti-pest serum of the Pasteur Institute. This is at the same time an anti-microbial and anti-toxic serum because it is obtained by injecting into a horse, not only the pest toxin but also the dead bacilli. It was desired at first to try to make a simple anti-toxic serum as is made for diphtheria, but it was discovered that the bouillon of the culture freed of the bodies of the microbes by filtration was absolutely without action upon rabbits, whence the impossibility of making a simple anti-toxic serum. It was therefore necessary to have recourse to the total culture, toxin and microbial bodies. Experiments demonstrated that it was possible under these conditions to obtain a really efficacious anti-pest serum. Yersin, Calmette and Borrel worked first upon rabbits and later experimented upon horses.

They scraped gelatine cultures, diluted the scrapings with a little bouillon and shut up the mixture in a sealed tube which they heated at 58° for one hour. This mixture containing the bodies of the pest bacilli, injected in a small dose beneath the skin, into the peritoneum or into the veins, conferred an immunity against the subsequent inoculation with living or virulent organisms; 3cc. of the serum thus used sufficed to preserve a non-immune rabbit against a subcutaneous inoculation of living cultures. The same quantity of serum injected into a rabbit twelve hours after virulent inoculation arrested the development of the microbe and cured the animal.

These three experimenters then attempted the immunization of a horse and used for this purpose a pest virus killing mice in two days. But in the horse subcutaneous injection of virulent cultures caused indurations and finally carbuncles, therefore it was thought better to make the injection into the veins. The horse first received into his veins a plague culture killed by heating it, that is to say, the bodies of the microbes. Then beneath the skin a filtered



culture in bouillon, that is to say, the toxin. He received injections of living and virulent cultures until he would no longer react to them. It is wise always to proceed carefully, for the first reactions are intense in the inoculated animal. It requires almost a year of treatment to render the serum of a horse very active. Before delivery to physicians, its preventative and curative powers should be proven by the two following experiments:

(A) Preventive test. Expose a small proportion of the skin of a guinea pig by removing the hair. Paint this with a virulent culture of plague. Inject some of the serum into the guinea pig, after which he should not take plague.

(B) Curative test. Inject the foot of a mouse with a culture of the bacillus pestis upon gelatin. Six hours after the inoculation the mouse receives a subcutaneous injection of serum amounting to one-tenth of his weight. The mouse should not succumb to the disease.

When the horse is prepared by means of intravascular injections of living and virulent cultures, it is well to know at what moment the horse is completely free from these dangerous bacteria. Carougeau has demonstrated that the blood of the horse remains dangerous for more than forty-eight hours and that it is prudent to wait a fortnight after the last virulent inoculation before taking the blood for the collection of the serum.

We will relate, further on, the results obtained by serum immunization and by serum therapy with the serum of the Pasteur Institute. We will say in the meantime that in animals the immunity acquired by an injection of anti-pest serum does not last more than ten or fifteen days.

Anti-pest serum of Lustig and Galleotti. We have seen before that these two authors prepared an anti-pest substance which, injected into animals, protected them from taking plague. But these same authors have utilized the same substance for preparing a curative serum. For this they dissolved 100 gm. of the powder in a small amount of a 1% solution of carbonate of soda and diluted this with 100 gm. of artificial serum. The horses receive 400-1500 gm. beneath the skin. They are bled two or three days after the last injection. (Vassal.)

Anti-pest vaccine of Besredka. The immunity conferred by the anti-pest serum of the Pasteur Institute is rapid but ephemeral. The immunity conferred by Haffkine's prophylactic is slow in establishing itself (8-12 days), but in return it lasts a long time. Calmette conceived the idea of mixing the two fluids, hoping to thus confer upon animals a rapid and lasting immunity. Unfortunately, the immunity thus conferred does not last longer than that acquired by the serum alone. Besredka thought that these poor results might be due to the presence of an excess of the serum in the mixture and that if the latter were reduced to a strict minimum it might be possible to create in the animal a true active immunity, giving all of the beneficial advantages of the added serum.

The microbes thus prepared have received the name of vaccines. Contrary to Haffkine's prophylactic, anti-pest vaccine is deprived of all toxic action.

Mice injected with this vaccine became protected against the inoculation of pest virus within forty-eight hours. Vaccinated soon after or on the same day of inoculation, the mice survived several days, but mice vaccinated with Haffkine's prophylactic became, according to Calmette and Salimbein, during the period preceding the receipt of immunity, less resistant as compared with mice which had not received the prophylactic. Vaccinated mice lost their resistance after five months and a half.

### The Plague of Man is Always Preceded by the Plague of Rats.

History. The oldest document which speaks of the relationship between the plague of rodents and that of man is found in the Bible. In the first book of Samuel it is recounted that after the Philistines stole the tabernacle from the Jews, they were punished by God who sent upon them a bubonic epidemic. In order to be relieved of this they were required to make a sacrifice of five golden rats and five golden mice. The ancient Egyptians used the mouse and the rat as a symbol of destruction (Olschanetzky.)

In the writings of Avicenne who lived about the year 1000, one finds the following information: "One of the forerunners of plague is the departure of mice from their burrows and their movements in a drunken state."

In the fourteenth century the black rat came from Asia and scattered over Europe, and became so absolutely unbearable that it was excommunicated by the church. Its arrival coincided with the famous epidemic of black plague. Pallas recounts how the rats crossed en masse the rivers of Russia, and that their passage was considered as a forerunning sign of plague.

Plague on land. The idea of the relationship between the plague of rats and the plague of man which was propagated from, and maintained in, the Orient, began in 1889 when Mahe, sanitary physician at Constantinople, called attention to the fact that epidemics of plague were always announced by a great mortality among rats and mice. He concluded by saying that these two special animals were excellent re-agents for the pest virus and would thus facilitate researches in the future.

After the attention of the public had been attracted to this particular point, it was noted that all of the epidemics of plague were preceded by a great mortality among rats and that the plague, in its march, followed in the tracks of the epidemic which had killed the rats. "We have learned," says Simond, "from many examples, that in all houses where rats go to die of plague, the inhabitants soon become victims of the disease which killed the rodents." In fact he has cited a case where the effects of plague patients carried from an epidemic focus into a clean spot, communicated plague to the rats of the house in which they were deposited which later transmitted the disease to the inhabitants of the quarter.

Plague on board. The important role played by rats in the propagation of plague is more clearly proven on board ships. Here are two examples among a thousand:

(a) Last year the "Senegal" left Marseilles destined for Asia Minor, having on board a large number of tourists who were going to make a scientific excursion in the Orient. But during the passage a suspected case of bubonic plague was found in a sailor. The "Senegal" put about and returned to anchor at the Lazaretto of Frioul without having touched at any port. The suspected case was found to be a true case of plague by bacteriological examination and by inoculation. The patient died soon after his arrival at the pesthouse. No other case of plague appeared. On making an inquiry to discover the origin of the introduction of plague on board one hundred and fifty dead rats and a large number of living rats were found. Some of these animals were submitted to bacteriological examination and found to have plague. The "Senegal" became contaminated in one of its preceding voyages to Alexandria, where plague was raging at that time.

(b) The story of the importation of plague into Paraguay is not less instructive. A ship left Rotterdam for Montevideo with a cargo of rice. During the passage two sailors died of an unknown disease. At Montevideo the rice was transported by the river boat "Centauro" and was discharged eight

hours later at Assumption. Thirty dead rats were found in the hold of the "Centaur." The day after discharging the cargo two sailors fell sick, and three days later two others became ill. In about fifteen days, an epizootic appeared on land among the rats of the country, and there followed an epidemic of plague, which extended to other cities like Rosario.

#### Identity of the Plague of Man and the Plague of Rat.

The plague of man and that of the rat constitute a single and identical disease. To establish this identity two sorts of argument may be invoked: first, identity of the anatomical lesions caused by the disease; and second, the identity of the two species of microbes isolated from the bodies of men and rats.

1. Identity of the anatomical lesions. The characteristic anatomical lesion of plague in man is the pest buboe, but this buboe is encountered also in the rat, not only in the case of spontaneous plague but also in the case of experimental plague as when the animal is inoculated in one of his hind feet.

2. Bacteriological identity. The identity of human bacilli and the animal bacilli have been recognized by all bacteriologists but it has been established very largely by Skschivan of Odessa. Besredka thus sums up the researches which were made in Russia:

After two cases of plague in October, 1901, a veritable crusade against rats was organized to the point that by the end of the campaign it was estimated that forty thousand rats were killed. Of this number Skschivan was able to examine anatomically and bacteriologically the respectable number of twenty hundred rats. From all the organs he prepared smears, moreover he made cultures from the blood, the liver and the spleen. The inoculations into guinea pigs were made by the subcutaneous route according to the procedure of Albrecht and Gohn in rubbing the shaven skin with a tampon soaked with the culture and also by smearing it on the nasal mucous membrane (Roux and Batzaroff.)

After the examination of a considerable number of rats, the author found himself in possession of fourteen cultures of plague. After these had been submitted to as complete a study as possible (morphological characters, cultures, virulence, action with anti-pest serum, with agglutinating serum, Pfeiffer's phenomenon) he arrived at the conclusion that there exists absolutely no difference between the bacillus of human plague and that of rat plague. In other words, that they constitute the same organism.

The study of the plague in India has established the fact that the disease may be transmitted to certain animals which live in the vicinity of the native houses. In the cities of the north, for example, where the tribes of monkeys roam at liberty in the streets, plague attacked the monkeys as well as man, and Hankin was able to prove that the bacillus of simian plague was the same as that of human plague. At Hardwar, as it was not possible to destroy the apes because of the native prejudice, it was decided to isolate them in cages in order to bring the plague among them at an end.

Simond has observed cases of plague in the gray squirrel and the tree rat so common in India, but the epidemic was not propagated unless they went to prowl and maraud habitations. The animals which lived in cleared fields in the forest were not attacked. It may thus be said that plague does not attack all animals except accidentally when it comes to them either from man or the rat.

Hypothesis of the origin of rat plague. Let us cast a retrospective eye upon the data which we have acquired in the study of plague. In the first place we have studied human plague. In the second place we have studied animal plague, demonstrated that it is of the same nature as human plague, which it

always precedes; in fact, that the plague of man is simply the continuation of the plague of the rat.

In the third place we must now consider what are the conditions under which the rat primarily acquires plague.

The history of human plague teaches us that all the epidemics came from the massive mountains which border Thibet. Once an epidemic is begun it travels over the world, as Simond and Yersin say, like the "Wandering Jew," stopping once in a while, but never permanently fixed. And this is explained very easily, for rats, like men who resist the infection, are immunized and the plague virus, finding no more to attack, disappears in the end. It is thus that all human and animal epidemics extinguish themselves. In Thibet only, the disease seems to be established in a permanent manner. There is its birth-place, its true endemic focus, just as the endemic focus of cholera is the delta of the Ganges, and that of yellow fever is the Gulf of Mexico. Two hypotheses offer themselves to us: one, that the rat takes the disease from his environment; the other, that he receives it from some other animal living in a savage state in these regions. The environment includes both water and earth, in fact, we have to consider three hypotheses in our search for the original rat plague: First, water; second, earth; third, animals.

Water. In this hypothesis the bacillus of plague lives in a saprophytic state in the lakes of Thibet, as the bacillus of cholera lives in a saprophytic state in the delta of the Ganges, and the filth of India, the rat taking the plague by drinking the water of the lakes as man gets cholera by drinking the water of the Ganges.

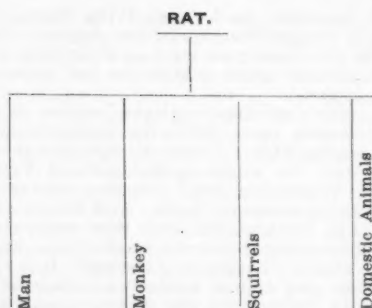
This hypothesis is hardly probable, for if it was to be thus there would be primary localizations in the intestines, which we never find. We have told in the chapter on bacteriology of the difficulties of adaptation of the pest bacillus to aquatic life.

Earth. In this hypothesis the bacillus of plague lives in a saprophytic state in the earth of Thibet as the bacillus of tetanus lives in a saprophytic state in the earth of gardens, in the humus of marshes and so forth, the rat primarily taking plague through abrasion of the skin as we might take tetanus through a wound soiled with earth.

This hypothesis is inadmissible, for if it were so, rats would infect the soil wherever there was an epidemic and plague would finally become endemic throughout the entire globe.

Animals. The hypothesis of an endemic (or more properly, an enzootic, as we are speaking of animals) has greater chances of being true. This enzootic is prevalent in a permanent manner in one species of animals which is found in the mountains of Asia. From this special animal the virus is automatically propagated to the rat and from the rat to man. Plague seems thus to be an accidental disease in the rat as it is in man, and it is necessary to trace further back to discover the animal which acts as host for the bacillus pestis.

Beliatsky and Reschnikoff, first, and Zabolotny, later, have drawn our attention to a rodent of Mongolia which they believe to be this animal host. This rodent is a sort of a marmot, the *Arctomys Bobac* or *Tarabagane*, which presents from time to time lymphatic swellings. The natives hunt it for eating purposes and also on account of its fat. According to these three Russian authors, the inhabitants of certain uncivilized districts of Siberia receive plague directly from this animal. The intermediary to the rat might thus be exterminated. One understands the full importance of this discovery if it should be confirmed. To eradicate forever plague from the surface of the globe it would be sufficient to declare a war of extermination no longer against the rat, which is cosmopolitan, but against this rodent of Thibet, from which the disease spreads to every portion of the globe. To fix the idea better, we will make a sort of genealogical tree of plague.



Modes of propagation of plague. Leaving aside the question of plague in the *Arctomys*, which is only a hypothesis, we see that the epidemic passes through two stages—the stage of the rat and the stage of man. We should discover how the disease propagates itself in each stage and how plague passes from one to the other. First how it passes from rat to rat, from rat to man and from man to man.

#### Propagation of Plague.

Propagation of plague from rat to rat. Simond, Ogata and Hankin have expressed the belief that the propagation of plague from rat to rat was made through the intermediary of fleas.

##### (a) Role of fleas in the propagation of plague.

Simond first demonstrated that fleas which were taken from rats suffering with spontaneous plague, contained in their stomachs virulent plague bacilli. In fact, he was able to transmit plague to mice by injecting beneath the skin a trituration of fleas from plague rats.

To demonstrate that infected fleas play a considerable role in the propagation of plague from rat to rat, Simond made the following experiment: Into a large bottle containing a rat recently dead of plague he introduced a small wire cage containing a well rat. The cage was suspended in the bottle so as not to permit direct contact between the sound rat and the cadaver of the plague rat. Nevertheless, the sound rat died of proven plague five days afterward.

This is because the fleas leave the cold body of the plague rat to search everywhere for a home upon some other animal. The contamination would not be explainable but for the intermediary of the fleas. Another peculiarity worthy of note is that sick rats are not able to free themselves from their fleas.

(b) Role of the nasal mucous membrane in the reception of plague. We have seen before that the transmission of plague from rat to rat might be made by the digestive route, the living rats eating the carcasses of dead rats. This is not always the case, for rats fed exclusively upon the cadavers of plague rats contract plague only exceptionally and it is very probable that the infection is received through the nasal passages. Here are some experiments which tend to prove this:

Simond has successfully infected rats by placing their food in a capsule in an infected fluid. The rat, in order to secure the food, was obliged to immerse its nose.

Batzaroff has also obtained these positive results by placing in the same bottle sound rats and rats which have been infected through the nasal mucous membrane. He fed them exclusively on carrots and beets, that is to say, foodstuffs that the rats could not nibble without rubbing it with the nose. The nasal mucus of the plague rats was deposited upon the carrots and contaminated the nasal mucous membrane of the sound rats.

Propagation of plague from rat to man. Plague presents in man three clinical forms, which correspond to the three different routes of penetration: first, bubonic plague, in which the skin was the route of penetration; second, pneumonic plague, in

which the route of penetration was by the respiratory tract; the third, intestinal plague, in which the organism entered through the digestive tract. The first forms of the disease are the most frequent; the third form is very exceptional. Let us see what the agents for the transmission of the virus are in each of these forms.

(a) Role of fleas in the transmission of the bubonic form. To demonstrate that fleas play a considerable role in the transmission of plague from rat to man, it is necessary to prove that the fleas which are found upon the rat are also parasite species of man and that plague always follows pricking of the skin.

We thought at first that fleas of rats would not bite man, but the contrary is today admitted by everyone. We have found, in fact, that there exist numerous species of fleas which may be either parasites of man or the rat. Of one hundred fleas found upon rats in Sydney during the last epidemic, Tidswell found the species in the following proportions:

<i>Pulex pallidus</i> .....	.81%
<i>Pulex fasciatus</i> .....	.10%
<i>Pulex Serratieps</i> .....	1%
<i>Typhlopsylla musculi</i> .....	8%

Only the last species is not a parasite of man. One thus sees that 92% of the fleas of rats will bite man. If the bite has been produced by an infected flea it becomes the point of departure of a legitimate case of plague, for numerous experiments have demonstrated that an incision made with a lancet charged with infected serum would give rise to bubonic plague. In this way White fell sick of plague eight hours after having been inoculated in this manner. Ceruti, in trying to immunize man as one would vaccinate against smallpox, killed five out of six inoculated. Dussap made the same experiment upon children, fourteen of whom died.

One sometimes encounters resistant individuals, as Desgenettes at St. Jean-d'Acre, but generally a grave, if not mortal, disease follows the punctures.

When in the course of a plague autopsy, the physician wounds his hand as happened to Dr. Striker at Bombay, he develops always a blister at the point of inoculation and an axillary buboe appears later.

In short, plague is a disease very inoculable by puncture. In man the lymphatic region attacked always indicates the route of penetration of the virus, as the femoral glands indicate the presence of an excoriation upon the lower limbs. In plague patients one should always examine the limb corresponding to the affected lymphatic region very carefully for small blisters, which are the sign of the original inoculation. On interrogating the patient one finds that the development of the blister has always preceded the appearance of the buboe.

One should not confound this primary blister with the blister of pemphigus or with the pustular eruptions which develop occasionally in the course of plague. The primary blister lies always in a region previously sound. The blister of pemphigus develops later, and always upon a region previously edematous.

The primary blister contains the bacilli of plague in a pure state. The infection is probably given in the following manner: The flea bites man by means of his proboscis, which being contaminated, produces a true inoculation, at the same time as the bite.

The primary blister is found on the average of one time out of twenty cases. The reason for this rarity is easily explained by the fact that the more sensitive the animal, the less violent the local action and inversely. The absence of the primary blister indicates a grave case of plague. Its presence, on the contrary, indicates a mild case or of average intensity.

(b) Role of dust in the transmission of the pneumonic form. We have seen in the chapter on bacteriology that the cadavers of dead rats remain virulent during a considerable time in rags and grain.



It is very probable that, in stirring the rags and grain, the laborers contract plague pneumonia. The virulent dust penetrates the bronchi and produces there a focal pneumonia. It is in this way that virulent dust produces laboratory plague pneumonias.

Propagation of plague from man to man. We will follow the same division as we have previously in the consideration of the various factors in the transmission of plague from man to man.

(a) Role of insects. We have already dwelt enough upon the large role played by fleas in the transmission of plague from rat to man, so we will not review it here. The same parasites evidently play an identical role in the transmission of plague from man to man.

Bedbugs constitute a category of parasites much more to be feared because they hide themselves during the day in the wood of the beds and bite man only at night. They must pass to the clothing of another person or hide themselves in the folds of dresses.

Here is the resume of an observation made by Simond in Bombay, which points out the possibility of contagion by bugs.

It occurred in the person of a little girl aged about two years, who was attacked with plague in her cradle during the night. She lived on the first floor of a house until then free from plague, situated outside of the plague stricken quarter. On being called to attend her he found that the mother had taken the child the day before through the contaminated neighborhood. The child presented a right axillary bubo and on the same side near the breast three small punctures which the mother declared had been made by bugs previous to the fever and the bubo.

One understands the great danger of contamination in barracks which are always great places for bugs.

The mosquito has also been accused of carrying the virus from the sick to the well. This mode of transport, if found to be true, is to be greatly feared in warm countries.

Lastly, flies after having been polluted by contact with plague patients may deposit the virus on a sound man at the nasal orifice.

(b) Role of dried sputum. Simond claims that moist sputum does not constitute a great danger of transmission of plague, for he never saw a case of plague develop inside of a hospital in India, for the plague pneumonias were nursed by convalescent patients, or their patients, who did not take any precautions against contact with the linens soiled by the sputum and nasal secretions. It probably is not the same with dried sputum, for the pest bacilli possibly, like the tubercle bacilli, preserve their virulence for a long time if enclosed in an albuminous envelope, gradually dried. The dried sputum of plague patients would be then very virulent, for the pneumonic forms of plague are always fatal.

Certain epidemics of plague are peculiar in that they present a great frequency of the pneumonic form. This type of epidemic comes probably from the non-observance of the most elementary rules of family hygiene.

(c) Role of the hands. Physicians and nurses who are to be in contact with plague patients, particularly those who make the dressings of the plague buboes, should carefully disinfect their hands before leaving the ward. One can easily understand that the hands soiled with the plague bacilli might deposit the virus directly into the nasal orifices or might introduce them into the digestive tract through the intermediary of foods or upon bread or fruit or by inoculation through the scratching of the surface of the skin. Here is a curious observation cited by Valassopoulos during the epidemic of Alexandria in 1899. It occurred in a young girl sixteen years old, four days after having her menses, during which an unbearable pruritis forced her to scratch herself

furiously, thus making openings for the infection. Two days later bilateral buboes appeared simultaneously with sanguinolent foetid vulvo-vaginal discharge, which, on being examined, revealed to the exclusion of the gonococcus (the patient was besides a virgin) typical bacilli of Yersin.

Similarly Valassopoulos cites another case where the inoculation was made on a level with the external auditory canal. There followed a serosanguinolent otorrhea with violent pains in the ear which were followed by swelling of the posterior and lateral glands of the neck.

#### Predisposing Causes.

1. Race. One would presume that the white race would be less sensitive to plague than the colored races. This immunity is not as it appears, for they are especially careful in their habits of hygiene in warm countries and keep their environment as clean as possible. The sensibility of the white race to the pest virus has been, moreover, sufficiently demonstrated in all of the epidemics which have invaded Europe. In India the meat-eating Mohammedans seem less sensitive to the pest virus than the Hindustani vegetarians. In the extreme Orient the Chinese seem, on the contrary, more sensitive than the Annamites. In all probability the question of the receptivity for or against plague is intimately connected with the question of cleanliness and it may be said in a general way that all races are sensitive to the plague virus.

2. Age. Children are more sensitive to plague. The aged, on the contrary, offer more resistance. This depends probably on the condition of the skin at the various ages of life.

3. Sex. Women, on account of their habits of home keeping, pay a heavier tribute than men.

4. Altitude. In houses the ground floor is more exposed than the first floor because of the proximity of the sewers and consequently of the rats. The mountain countries are habitually worse attacked because the inhabitants are poorer and more covered with vermin.

5. Ports of commerce. The great ports of commerce are almost always the point of importation of plague because the rats leave the ship at the same time as the merchandise; for example, the beginnings of the epidemics which broke out in London, Liverpool, Marseilles, Hamburg, etc.

#### Clinical Study of Plague.

1. Incubation. Authors are not uniform as to the duration of the incubation of plague. After inoculations which have been made with a lancet, it varies from thirty-six hours to five days. Some authors think that it may be as long as nine days.

The individual in the incubative stage of plague appears to be in excellent health up to the moment of the invasion; that is to say, up to the moment when the first symptoms of the disease appear. At other times, on the contrary, the patient complains of stiffness in the joints or unusual lassitude or perhaps an intense cephalgia.

2. Classification of the clinical forms. One sees always two clinical forms of plague; the form with bubo and that without. The last form may be subdivided into three secondary forms.

1. Bubonic plague.
2. Plague without bubo.
  - (a) Septicemic form.
  - (b) Pneumonic form.
  - (c) Intestinal form.

We may also classify the clinical forms of plague according to the route of penetration of the virus. We may thus distinguish three principal forms of the disease.

1. Cutaneous pest.
2. Pulmonary pest.
3. Intestinal pest.

Cutaneous plague is the more common form, but it presents various degrees of virulence. Sometimes it proceeds normally; sometimes, on the contrary, it is fulminant; sometimes benign.

We may thus divide the cases of plague in the following manner:

Cutaneous plague:

- (a) Fulminant form.
- (b) Bubonic form.
- (c) Ambulatory form.

**Cutaneous Plague.** We have seen, according to the researches of Simond, that the skin is the usual route of penetration of the virus: The enlarged glands indicate clearly the lymphatic territory in which the inoculation has been made. But according to the receptivity of the subject, according to the virulence of the pest bacilli, the point of inoculation may be imperceptible or on the contrary very apparent in the form of a primary blister. The absence of a local lesion indicates, according to the general rules of bacteriology, a soil very susceptible to plague. It is thus that the anthrax bacillus inoculated into a guinea pig kills the animal without producing a local lesion. In man, on the contrary, who is more resistant to anthrax than the guinea pig, a malignant pustule is formed, indicating that it was at that point that the virus penetrated the organism.

The plague virus acts in the same manner in man: if it attacks a susceptible individual it is without local manifestation: if it attacks a more resistant individual, it is accompanied with a local reaction which may simulate a true malignant pustule.

Thus one remarks a very variable receptivity between individuals when one is doing vaccinations. Sometimes there is formed a varioloid pustule at the point of inoculation. Perhaps it does not form at all and in the latter case the inoculated disease is always grave, sometimes fatal. It is the same with cutaneous plague which is a true disease of inoculation.

(a) Fulminant or Septicemic Form: The disease breaks out quickly with an intense chill and a violent hyperthermia of forty or forty-one degrees; the cephalalgia is very acute and is accompanied with an extreme weakness, trembling of the voice, delirium and vertigo. The patient staggers in walking like a drunken man, the skin is dry, the face injected, the pulse small, frequent and irregular. At this stage delirium is followed quickly by an adynamic phase, the respiration is embarrassed and the patient dies in about twenty-four or twenty-six hours without having presented any of the symptoms of plague, bubo, pustule or petechiae.

Observation 1. (Simond) Subject Tho, aged 25 years. This man has been sick five days. Nevertheless, he has not been confined to bed. The night of this observation, on returning from a walk he was seized with a great weakness and later presented delirium. At the time when I was called to see him, he was in a state of prostration, from which he emerged at intervals to speak a few disconnected words and move his limbs. The respiration is difficult, the larynx obstructed with mucus, which he evacuated with difficulty by frequent expectoration. The skin is dry, very hot and does not present a rash. There is no adenitis, neither in the groins nor the axillae nor the neck. The tongue is slightly coated and moist, the axillary temperature is 41.5°, the pulse is filiform, the heart beats 160 times per minute. The abdomen is not distended, there has been absolute constipation for several days and anuria during this evening. The liver and the spleen are apparently normal. Death supervened three hours after my examination.

(b) Bubonic Form. The beginning is rapid as in the first case, but the patient in spite of an extreme weakness preserves his intelligence at least during the first days. The characteristic symptom

of this form is the adynamia. The pathognomonic sign is the bubo, but besides the adynamia and the adenitis, one frequently observes other phenomena as pustules, petechiae and gangrene of the extremities. The adynamia is usually very pronounced and for this reason plague may be considered as the most brutal of typhoid diseases.

The bubo is to plague what the ulceration of Peyer's patches is to typhoid fever. It is found in 75% of cases. Sometimes it is single, sometimes multiple. According to the statistics collected by Monneret, in 140 cases of plague, 125 times there was one bubo, 13 times there were two, once there were three and once six.

The buboes are said to be external when they protrude above the level of the skin. On the contrary, they are called internal when they are placed in the abdominal or thoracic cavities.

As to the location of the buboes here are the results given by the statistics of Cabiadis: groin, 710 cases; axilla, 406 cases; neck, 98; multiple localization, 122. Exceptionally, the buboes are localized in the popliteal space and at the elbow.

In the order of gravity, we find that the buboes in the cervico-parotid region entail the heaviest mortality; next come the axillary buboes which are complicated with a secondary plague pneumonia; next multiple buboes, and lastly inguinal and femoral buboes.

Usually fever is the first symptom of plague. It appears abruptly and mounts immediately to 39°C, 40°C or may perhaps rise as high as 42°C. The glandular pain does not appear for several hours afterwards. Sometimes the two symptoms manifest themselves simultaneously but it is rare that the bubo precedes the fever.

In a certain proportion of cases which Simond reckons at about one-twentieth, that is to say in 5% of cases, the first apparent sign of bubonic plague is a lenticular spot resembling the bite of a flea or a bedbug. This spot at first occasions itching, next follows pain and the formation of blister or pustule called primary. These primary pustules are rarely multiple. They are usually solitary and a few hours after their appearance the corresponding glandular region begins to enlarge and the fever to light up.

The primary blister persists during the entire duration of the disease, sometimes remaining lenticular, sometimes spreading. In some of the cases the primary blister causes a necrosis of the adjacent tissues and gives rise to a carbuncle.

The primary blister should not be confounded with the pemphigoid blisters or the pustular eruptions which develop in the course of plague. The primary blister remains always in a region originally healthy. The pemphigoid blisters develop later and usually in a region previously oedematous.

The primary blisters contain the bacilli of plague in pure culture thus indicating that the subject in whom they are evolving presents a certain resistance to the pest virus.

The bubo is usually about the size of a walnut though when the chain of glands is involved the swelling is considerably larger. At this time one observes two modes of termination, resolution or suppuration unless death interrupts the course of the disease. Termination by suppuration is much more frequent than termination by resolution. The pus does not offer any peculiar characteristic. The pest bacilli are very abundant during the first few days, becoming more and more rare in proportion as the suppuration is prolonged.

The adenitis frequently offers a characteristic evolution which distinguishes it from common adenitis. After a few days of suppuration the gland may be thrown out entire as a sphacelus, leaving in its place a solution of continuity of greater size than that of the gland.

The appearance of the buboes sometimes produces

a rapid fall of temperature but it is not a true remission as after the eruption of smallpox. The appearance of the buboes is no longer considered a true critical eruption as has been described by certain authors. The bubo is only a stage of the disease, but when suppuration takes place one knows he has to deal with an attenuated virus capable of producing pus but incapable of making a septicemia. In the same way one may say, in a general way, that all glands which suppurate indicate a favorable termination. The cicatrization of the buboes is made with rapidity, at least when there is grafted upon the plague infection no extraneous complication as phagadema, erysipelas, etc.

The bubonic form of plague is the form which is most subject to complications because it evolves the most slowly. The other forms of plague are so much more grave that they usually kill the patient before the complications have had time to be produced.

One of the most severe complications which may appear in the course of bubonic plague is pneumonia, or rather, secondary plague broncho-pneumonia. This is usually the result of the spread of the plague inflammation by contiguity and consequently is encountered more frequently in the case of cervical or axillary bubo. From the moment that this complication manifests itself the prognosis is much more gloomy, the plague evolving more rapidly without having in the meantime the explosive features of a primary plague pneumonia. If the broncho-pneumonia is not very extensive the patient may recover, but one must consider this complication very grave, producing as it does a mortality of more than eighty per cent, according to Simond.

Plague conjunctivitis is sometimes simple and sometimes complicated with an ulcerative keratitis, with purulent degeneration of the eye. It is due to the presence of pest bacilli upon the surface of the conjunctiva.

The carbuncles may be primary if they precede the appearance of the bubo and are not in this case, as Simond maintained, very violent true primary blisters; at other times they are secondary and do not appear until after the adenitis as complications of pemphigoid eruptions.

(Concluded in September.)

#### MALCOLM MORRIS KNIGHTED.

Many will remember Malcolm Morris, now Sir Malcolm Morris, who delivered a most interesting course of lectures on Diseases of the Skin under the Lane endowment at Cooper Medical College. His friends will be pleased to know that King Edward on January the first last, dubbed him a Knight Commander of the Royal Victorian Order. Malcolm Morris is now, therefore, Sir Malcolm Morris, K. C. V. O.

This event is particularly gratifying to men engaged in the specialty of Cutaneous medicine, as it is the first time one of their number has been knighted in England for distinguished medical services. It is true that Erasmus Wilson was also knighted, but his title came, not on account of scientific or medical work, but because of the donation of the Egyptian obelisk which now stands on the Thames embankment. This is obviously a different affair.

In another way this deserved honor points a lesson. Sir Malcolm Morris is not alone an excellent man in his specialty, but he is a clever physician in a general sense, and for a long time was known as the able editor of *The Practitioner*. In addition to this, Sir Malcolm is a man of wide general literary culture. All these abilities congrue to a well balanced judgment, as in no specialty is a knowledge

of the every day working of the body so necessary as in diseases of the skin, and general culture, while not absolutely essential for the cure of disease, is of importance to the medical man in whatever sphere his activities may lead, in developing the human side of him. The most widely respected and beloved physicians have always been those who, to their special knowledge have added an intimate acquaintance with the field of general literature, as for instance, the late Professor Kussmanl, and in the present day, Wm. Osler. We feel, therefore, that King Edward in selecting Sir Malcolm for the high honor he has conferred upon him, has done a graceful and wise act.

D. W. MONTGOMERY.

#### FUNGUS COCCIDIODES—THE CALIFORNIA DISEASE.

Since 1892 some eighteen cases of this disease have been reported and as all but one of them have lived at some time of their lives in the San Joaquin Valley, this has been very appropriately called the California Disease. Dr. Kellogg of Bakersfield, Kern County, California, has seen more of these interesting cases than any other one doctor and at a meeting of the San Joaquin Valley Medical Society held in Tulare recently, he brought one of the victims of this disease before the meeting, giving the history of this case, with such treatment as had been tried, and reviewed such instances of the malady as he knew of. At his request Rr. Ryfkogel presented the findings with the microscope and read a paper on the disease.

Those who have met with cases of this disease feel sure that many suffering therefrom fail to have their sickness properly diagnosed (it is probably called tuberculosis) and on this account desire to call the attention of the profession to its symptomatology. Dr. Ryfkogel's paper was printed in the State Journal, June, 1908.

#### INTERNATIONAL CONGRESS ON TUBERCULOSIS.

President Roosevelt has accepted the presidency of the International Congress on Tuberculosis. His letter to Dr. Lawrence F. Flick, chairman of the Committee of Arrangements for the Congress, follows:

The White House, Washington, May 12, 1908.

Sir—It is with great pleasure that I accept the presidency of the "International Congress on Tuberculosis" which is to meet in this city on Sept. 21, 1908, and extend its session to Oct. 12, 1908. Official duties, however, may prevent my presiding at the initial meeting of the Congress, in which case I will deputize Secretary Cortelyou.

The importance of the crusade against tuberculosis, in the interest of which this Congress convenes, can not be overestimated when it is realized that tuberculosis costs our country two hundred thousand lives a year, and the entire world a million lives a year, besides constituting a most serious handicap to material progress, prosperity and happiness, and being an enormous expense to society, most often in those walks of life where the burden is least bearable.

Science has demonstrated that this disease can be stamped out, but the rapidity and completeness with which this can be accomplished depend upon the promptness with which the new doctrines about tuberculosis can be inculcated into the minds of the people and engrafted upon our customs, habits and laws. The presence in our midst of representatives of world wide workers in this magnificent cause gives an unusual opportunity for accelerating the educational part of the program.



The modern crusade against tuberculosis brings hope and bright prospects of recovery to hundreds and thousands of victims of the disease, who under old teachings were abandoned to despair. The work of this Congress will bring the results of the latest studies and investigations before the profession at large and place in the hands of our physicians all the newest and most approved methods of treating the disease—a knowledge which will add many years of valuable life to our people and will thereby increase our public wealth and happiness.

The International Congress on Tuberculosis is in the interest of universal peace. By joining in such a warfare against a common foe the peoples of the world are brought closer together and made to better realize the brotherhood of man; for a united interest against a common foe fosters universal friendship. Our country, which is honored this year as the host of other nations in this great gathering of leaders and experts and as the custodian of the magnificent exhibit which will be set up by the entire world, should manifest its appreciation by giving the Congress a setting worthy of the cause, of our guests, and of ourselves. We should endeavor to make it the greatest and the most fruitful Congress which has yet been held, and I assure you of my interest and services to that end.

With expressions of appreciation for the compliment conferred in extending the invitation to become president of the Congress.

Very respectfully,

THEODORE ROOSEVELT.

Dr. Edward L. Trudeau has been elected honorary president of the Congress, and Vice-President Fairbanks, Speaker Cannon and the governors of the states have been asked to serve as vice-presidents. The list of vice-presidents is not complete, but those who have agreed to serve in that capacity include Vice-President Fairbanks, Speaker Cannon, Governors Gillett of California, Buchtel of Colorado, Woodruff of Connecticut, Deneen of Illinois, Hanly of Indiana, Cummins of Iowa, Hoch of Kansas, Willson of Kentucky, Cobb of Maine, Crothers of Maryland, Warner of Michigan, Johnson of Minnesota, Noel of Mississippi, Folk of Missouri, Floyd of New Hampshire, Fort of New Jersey, Hughes of New York, Glenn of North Carolina, Burke of North Dakota, Harris of Ohio, Chamberlain of Oregon, Stuart of Pennsylvania, Ansel of South Carolina, Patterson of Tennessee, Cutler of Utah, Proctor of Vermont, Swanson of Virginia, and Dawson of West Virginia.

The German committee of arrangements for the Congress has a membership of over one hundred and fifty. The list forwarded to the Secretary-General by Dr. Nietner includes some of the highest dignitaries of the empire. Dr. von Bethmann-Hollweg, the president of the committee, is the Imperial Secretary of the Interior and the Vice-President of the Prussian Ministry of State. The vice-presidents are Count von Lerchenfeld, royal Bavarian State Counsellor and Ambassador Plenipotentiary, and Baron von Knesbeck, royal master of ceremonies and Chamberlain to her majesty the Empress; and the treasurer is Ernst von Mendelssohn Bartholdy, a member of the Prussian Diet. Another distinguished member of the committee is Victor, Prince of Hohenlohe and Corvey and Grand Duke of Ratibor. Drs. von Leyden, B. Frankel, Orth, Baginsky, and Nietner constitute the central commission, and others named on the list include Dr. Robert Koch, Dr. Emil von Behring, Dr. A. Frankel, Dr. Richard Neisser, Dr. Lydia Rabinowitsch-Kempner, Dr. G. Pannwitz, Dr. Schottelius, Dr. Abb, secretary of the Civil Cabinet of the Emperor at Berlin; Dr. Bumm, president of the Imperial Board of Health, and Dr. Schjerning, general chief of the Army Sanitary Corps and of the Medical Division of the War Department.

A committee of sixty-four members has been appointed to arrange for the part Belgium will take in the Congress and in the exhibition to be held in connection with it. M. Beco, the Governor of Brabant, is honorary president and Dr. Dewez, President of the Belgian Anti-Tuberculosis League is president of this committee. Other members of the committee are M. Velghe, Director-General of the Ministry of Agriculture; Dr. Van Ryn, Secretary General of the Belgian Anti-Tuberculosis League; Dr. Bordet, director of the Pasteur Institute at Brussels; M. R. Waracque, Dr. Cousot and Dr. Descamps, all of whom are members of the Chamber of Representatives; Dr. Devaux, Inspector General of the Department of Health and Hygiene; Dr. Courtoy, president of the Provincial Medical Commission of Namur; Dr. Dethier, director of the Anti-Tuberculosis Dispensary at Namur, and Dr. Wouters, director of the dispensary at Louvain.

#### FIFTH PAN-AMERICAN MEDICAL CONGRESS

The Fifth Pan-American Medical Congress will be held this year in Guatemala from August 5 to August 10. A large attendance is expected. The following are the officers of the Congress:

President—Dr. Charles A. L. Reed.

Vice-President—Dr. A. Van Der Veer.

General Secretary—Dr. Ramon Guiteras, 75 W. Fifty-fifth street, New York.

Secretaries of sections:

sections:

General Medicine—Dr. Judson Daland, Philadelphia.

General Surgery—Dr. Emmet Rixford, San Francisco.

Hygiene, Demography and Epidemiology—Dr. T. Darlington, New York.

Nervous and Mental Diseases—Dr. Charles Hughes, St. Louis.

Dermatology and Syphilography—Dr. Harry E. Alderson, San Francisco.

Tropical Medicine—Dr. John Swan, Philadelphia.

Military Sanitation—Dr. L. L. Seaman, New York.

Ophthalmology—Dr. H. Bert. Ellis, Los Angeles.

Nose, Throat and Ear—Dr. W. S. Bryant, New York.

Pathology and Bacteriology—Dr. Walter Chase, Boston.

Gynaecology, Abdominal Surgery and Obstetrics—Dr. H. P. Newman, Chicago.

Children's Diseases—Dr. C. G. Kerley, New York.

#### UNIVERSITY OF CALIFORNIA, MEDICAL DEPARTMENT, ALUMNI ASSOCIATION.

At the University of California Hospital, April 6, 1908.

Meeting called to order at 8:30 p. m., Dr. Harold P. Hill presiding.

Cases shown from the various services in the hospital.

Dr. Herbert Moffit presented:

1. Case of Addison's disease.
2. Case of chronic hydrocephalus, with draining of cerebro-spinal fluid through nose.
3. Case of myoclonia multiplex.

Dr. T. W. Huntington exhibited a case of popliteal aneurism due to trauma and reviewed the various available operative measures.

Dr. D. W. Montgomery read a paper on "The Itch."

Meeting at U. C. Medical Dept. Hospital, June 15, 1908.

Meeting called to order at 8:45 p. m., Dr. Harold P. Hill presiding.

Cases shown in the various services of the hospital.

Dr. Spaulding showed two cases of inanition and

demonstrated the use of a simple and effective incubator and also the method of feeding such cases by gavage. Two cases of hereditary syphilis were also shown.

Dr. Herbert Allen exhibited a case of esophageal ulcer and demonstrated the use of the esophagoscope.

Dr. Bine showed a case with very marked ophthalmotuberculin reaction.

Dr. Ryfkogel presented a case of spindle cell sarcoma of the humerus and scapula and described the interscapulo-thoracic operation which he had performed.

Dr. Ryfkogel showed specimens of thyroid which he had removed from a case of goitre.

Dr. Berndt exhibited a spleen weighing ten pounds, which he had recently removed from a case of splenic leukemia, the patient having survived the operation and at the present time being in fairly good condition. The prognosis, however, is very doubtful.

It was announced that in the future these meetings would be almost entirely clinical. The president announced that those desiring to exhibit cases or present material should notify Dr. H. E. Alderson, chairman of the executive committee.

## EYE, EAR, NOSE AND THROAT SOCIETY.

Meeting of May 21, 1908.

Paper by Dr. C. S. G. Nagel, "Pre-retinal Hemorrhage with Report of a Case."

Paper by Dr. W. F. Blake, "The Early Recognition and Treatment of Squint."

Paper by Dr. L. C. Deane, "Thrombosis of Superior Longitudinal and Lateral Sinuses, Treated by Opening Through the Torcular Herophili Complicated by Pregnancy; Recovery."

This paper presented several features of interest. It was a case of uncomplicated sinus thrombosis, arising from a chronic purulent otitis media. The infection was transmitted directly through the inner plate from the mastoid to the sinus. The jugular vein, sigmoid, lateral and superior longitudinal sinuses and torcular herophili were involved.

The jugular vein was completely excised, the lateral and sigmoid sinuses were obliterated through the mastoid wound, also the superior longitudinal sinus by opening over and through the torcular herophili. The latter procedure was unique in that after consulting several world's authorities in this country and in Europe, and reviewing the literature of the subject, no similar case could be found where the torcular herophili had been opened directly by trephine through the occipital protuberance and the confluent sinuses treated by this route. Such treatment would ordinarily be considered fatal, as the torcular herophili receives the flow of practically all the venous circulation of the brain. I was enabled by careful manipulation to divide the venous stream into two, allowing the left side of the torcular, into which flows the straight and occipital sinuses, to remain patulous while curetting and packing the right side, including the entire superior longitudinal sinus. Twice following this was the left side opened, allowing free bleeding for the space of a few seconds, and extracting each time from twelve to fifteen ounces of blood. This dangerous procedure was resorted to for the purpose of clearing the left channels of thrombic material, as the temperature variations were unaffected even after the sinuses and jugular vein of the right side had been obliterated. This I believe to be directly accountable for her recovery.

The temperature was unusual, though typical of septicemia from thrombosis, in that for twenty-four days it rose daily from normal to as high as 107.4 on

two occasions, and always descending to normal again in a few hours.

An uncontaminated specimen of her blood was taken from the median cephalic vein. It was found to contain a pure culture of staphylococcus pyogenes aureus.

During her illness she carried a five to six-months-old fetus, later giving birth to a healthy child.

Following discussion on paper by Dr. Deane:

Dr. Barkan: The case is such an exceedingly interesting and surprising one that we require time in which to think it over. The doctor himself has had many months in which to work on it, and I have tried to follow fairly closely his account of the case. I know of no case of my own which would come at all near the experience Dr. Deane has had. It struck me that the repeated rise of temperature to the height of 107.4° once is appalling. It is hard to conceive of how a woman could get on with such a temperature. This is one feature which is surprising. Another feature that is peculiar is that the doctor did not open the middle ear and make the radical operation afterwards. That all these striking symptoms of infective thrombosis could be followed without regard to the disease in the middle ear is a rather interesting and striking point. The taking of blood from the case and no particular symptoms showing themselves on the left side from this continuance of the thrombus in the left lateral sinus is surprising. One can but follow such a case and feel encouraged, and certainly this experience of Dr. Deane is most invaluable. It must have been an appalling task. The difficulties which Dr. Deane described having met with in opening the bone, necessitating the use of the gouge and hammer, brings to my mind my experience and that of many of you—that in such a case it would have been an easier means of accomplishing the opening through that thick bone by using MacEwen's electric burr. I merely suggest this as a means which would have facilitated work considerably.

Dr. Deane: I think that maybe the circular saw could be used and the burr, but the burr would have certain limitations. You do not know exactly how far you can go with it. The idea was, in this case, to reach the dura mater, and one would have to stop with the burr before reaching that and take up the chisel.

Dr. Barkan: That is just where Dr. Deane is mistaken with regard to the use of the burr. The burr enables one to go right to the dura mater without fear of hurting the dura mater. There is no other instrument which will enable you to penetrate into the depth with such certainty as the burr. Every moment you can see just what is before you. I am, however, merely suggesting the use of the burr, not fault-finding.

Dr. Cohn: I wish to voice my admiration for the way this case was handled and in regard to the results obtained. It is a unique case so far as the knowledge of most of us goes. I was present at most of his operations on the case, and voice the sentiment of those present to-night that it was skillfully handled. It was really a remarkable case. It is always a matter of congratulation if the limit of the operable field is extended, and Dr. Deane has extended this. It was at my suggestion that Dr. Deane wrote to many authorities doing this kind of work, and all replies were negative with regard to their having had this experience. In our struggles with these cases we are able to extend the work. As you have gathered from Dr. Deane's paper, it was appalling to see the terrific destructions which had taken place and at the same time see the ease with which Dr. Deane moved around from sinus to sinus, as if it were child's play.

**COUNCIL ON PHARMACY AND CHEMISTRY.**

Capsules Glycerophosphates Comp. (H. K. Mulford Co.) will be added to the list of new and non-official remedies approved by the Council on Pharmacy and Chemistry, which will be published in the Journal July 4.

Isoform Powder (Koechl & Co.) having been withdrawn from the market, has been omitted from the list of articles accepted for new and non-official remedies, at the request of the American agents.

Investigations made under the direction of the Council having demonstrated that the claims made for Isopral (Farbenfabriken of Elberfeld Co.) are not justified by the facts, the Council has voted to omit this article from the list.

**ALAMEDA COUNTY.**

The meeting was called to order at 8:30 o'clock; Dr. E. M. Keys in the chair.

The program of the evening was conducted by Dr. Jas. Hogan of Vallejo and his assistant, Mr. West, giving a complete example of preparing and standardizing the various vaccines; showing many details of laboratory technic; greatly simplifying the work as well as the paraphernalia.

An ingenious device for regulating the heat of an incubator with an electric light was shown, as well as the method of making pipettes and capsules for the emulsions and solutions. The technic of the entire process was fully covered. In conjunction with the above demonstration, Dr. Hogan read the following paper:

**Personal Experience with Bacterial Vaccines.**

At the June meeting of the Northern California District Medical Society, held in Napa last year, I read a paper on the "Opsonic Index," and gave a practical demonstration of Wright's technic.

At that time I was completely "opsonized" and hoped that by the time a year had passed I would be able to show tables of indices taken in all the cases I have had under treatment; but I am sorry to say that I have not been able to obtain satisfactory indices in any case and have been compelled to carry on the work from a clinical standpoint, getting marvelous results in some cases and failures in others.

This was very discouraging at first, but as the majority who are working in this field report the same trouble I felt that the failure is not all my fault.

Some expert bacteriologists claim that it is not possible to get a satisfactory index at all, others claim to do so in every case, and while my experience would put me in the same class with the former, I wish that I had the ability of the latter, as I believe that there is no better way to regulate your dose and space the intervals than by the aid of the opsonic index.

I would have been tempted to throw up the work in the start if it had not been for the fact that my first case was one of colon bacillus infection of the kidney of an acute type in an old lady who had been treated with all the urinary antiseptics, etc.

I found a pure culture of colon b.; made a vaccine; tried for several days to get satisfactory indices, and in desperation gave an initial dose of fifty million. The result in this case was a clearing up of all the symptoms in a short space of time.

The literature on this subject has assumed such enormous proportions that at the present time it would take one's whole time to follow it. And so, instead of giving extracts from the literature, I will simply give you a statement of facts from the knowledge that I have acquired in ten months' work, fortified by the results of others.

I will refrain from touching on any of the theories of opsonic work, as splendid articles have appeared in the journals from time to time by such prominent

workers as Wright, Ross, Allen, Hekton, Hollister and others.

It is the consensus of opinion that the best results are obtained from a vaccine made by isolating the organism from the patient's own lesion. There are some conditions that may mitigate against this, notably:

1. Where the isolation of the organism is difficult and tedious, as in tuberculosis.

2. Where the infection may be so acute that the loss of time consumed in making a vaccine would put the patient beyond help.

3. Where the infection is so chronic that the virulence of the organism has been greatly reduced. An example of this is in chronic gonorrhea.

4. Where you are dealing with organisms of definite type—as bacillus septus, and the pneumococcus.

If any of these conditions exist the use of a stock vaccine will have to be resorted to. I have had no experience with the use of stock vaccines, excepting in tuberculosis. Here we use the method of Wright, using Koch's T. R., diluting it until 1 c.c. equals 1-500 mg. of dried tubercle bacilli, and using from 1-2000 to 1-1000 mg. at a dose. I have no doubt that better results will be obtained in the use of a personal vaccine even in these cases.

Preparation of vaccine.—It is best, first, to determine whether you are dealing with a pure or a mixed infection. In case it be a mixed infection you will have to plate out the culture and isolate your organism in that way. Finding that you have a pure culture, select the medium that it best grows upon and transfer it to a broad surface, so that you will have a good growth. Taking a twelve to twenty-four hour growth, you are ready to start your vaccine. Add enough 1-10 per cent saline solution to cover your field of growth and by rubbing with a platinum loop emulsify the growth.

Pour the emulsion into a centrifuge tube and add enough saline solution to measure 5 c.c. Whirl for about three minutes, when all the large clumps will have been sedimented.

The centrifugated emulsion is now carefully poured into a test tube, taking care not to disturb the sediment; in the test tube also place about fifty small glass beads, draw out upper end of test tube in a Bunsen flame and seal. A thorough shaking will cause the beads to break up any small clumps not thrown down by the centrifuge. The emulsion, now called the concentrated vaccine, is placed in a steam sterilizer and a temperature of 60° C. maintained for one hour. This is sufficient to arrest all growth in the tube. The next step is to standardize the vaccine. This is done by taking equal volume with blood in a "capillary pipette." A mark about  $\frac{5}{8}$  inch from end of pipette is made, representing the unit of volume.

First draw up into the pipette four or five volumes of 2 per cent sodium citrate solution, then a small volume of air, next a volume of fresh blood, another volume of air, and finally a volume of emulsion. Mix by alternately drawing in and expelling the mixture on a clean glass slide. Divide into three parts and make smears upon clean slides. Dry smears in air and stain with any good blood stain, such as Leischman's. We are now ready to count. This is accomplished under a 1-12 inch oil immersion lens. Count the number of red blood cells and bacteria in each field, or until 500 red cells have been counted. Allowing five million red blood cells to the cubic millimetre, the product of five million and the number of bacteria counted, divided by 500, or the number of red blood cells counted, will equal the number of bacteria in one cubic millimetre of the vaccine. This, multiplied by 1000, will equal the number in one cubic centimetre. Having found out the number of organisms per c. c. of the concentrated vaccine, dilutions are now made to any de-



sired strength, such as 100, 250, and 500 million per c. c., for convenience in administration. The vaccine is now lysolized by adding sufficient lysol to equal 0.25 per cent.

Sufficient vaccine for individual doses is now placed in glass tubes and the ends sealed off in a flame. The vaccine is now rendered sterile by maintaining a temperature of 60° C. for one hour, after which it is ready for use.

W. L. B.—Age, 24. Occupation, fireman. Father and mother alive and well. Enjoyed the best of health until March 15, 1908, when he received an infected wound of the back of right wrist. The inflammation extended to the back of right hand. Wound discharged pus for three weeks. On the 5th of April patient complained of pain in the region of the right kidney. The pain became so great that on the 8th he had to give up and go to bed. Patient was brought to my hospital on the 27th of April, 1908. Condition: Pulse, 100; temperature, 100° F. General condition poor; had lost 21 lbs. weight since receiving wound in hand; had had night sweats for the previous eight days; examination showed great tenderness in the region of right kidney. Blood count showed reds 4,872,000, whites, 12,000, polys. 86%, lymphocytes 14%. Urinalyses showed a few leukocytes but not t. b. Sputum analysis failed to show t. b. Ophthalmologic reaction was negative. Blood culture failed to reveal any organism. Examination of feces was negative for t. b. Patient showed all signs of pus intoxication. A diagnosis of abscess of the right kidney was made. On the first of May operation revealed two abscesses in the right kidney. The kidney was extirpated. An agar slant inoculated with pus from the interior of the kidney showed staphylococcus pyogenes albus in pure culture. The patient made a good recovery from the shock of operation, the kidney secreted normal urine in normal amount, but the patient still showed signs of a severe general infection, while the temperature ranged from 100° to 103° F. A vaccine was prepared from the culture of staphylococcus and on the 7th of May a dose representing 250 million cocci was given. No apparent clinical change was noticed, although the patient stated he felt better. On the 9th of May a dose representing 500 million cocci was given. On the 12th of May a dose representing 750 million cocci was given. No reaction, but patient still stated that he felt better. On the 23d of May a dose representing one billion cocci was given. On the 5th of June a dose representing one billion cocci was given, after which a rapid convalescence followed. We know that some cases of pyemia recover, but this seemed such a hopeless case that I feel the vaccines had a great deal to do with his rapid recovery.

J. B. McC.—Age, 46. Occupation, proprietor beer bottling establishment. Single. Father and mother still living and well. Average weight, 174 lbs. Had two attacks of pleurisy, the last being in April, 1907. Temperature sub-normal. Coughs some, but cough is not troublesome. Expectoration, profuse. Weight, 152 lbs. General condition poor. Pleurisy painful at times. Tubercle bacilli are present in the sputum in medium numbers. Physical signs: Dullness left side. Case diagnosed as pulmonary tuberculosis. Presented himself for treatment 2nd August, 1907, and an injection of 1-1000 mg. of tuberculin T. R. was given, to be repeated at intervals of ten days each. A marked reaction was noticed after the first five doses, also a slight reaction after the tenth dose. After the third injection there was a decided improvement in the patient's general condition, also the pleurisy had improved, but the patient complained of profuse expectoration.

A microscopic examination of sputum showed a great decrease in the number of tubercle bacilli, but there were many pus cells and staphylococci present. A specimen of sputum was received into a sterile

jar and carefully washed in sterile water. A loopful was taken from the center of the sputum and an agar slant inoculated. A rich growth was obtained and after plating the staphylococcus pyogenes albus was isolated. From this a vaccine was made, and on the 12th of November a dose representing 100 million cocci was given, to be continued at intervals of ten days, in addition to the tuberculin.

Patient continued to improve and on the 1st of January the weight was normal and the tubercle bacilli absent from the sputum. By March, 1908, the sputum was well cleared up and expectoration very scanty. At the present date the patient "is the picture of health," has neither cough, pleurisy, nor expectoration and sleeps and eats well.

A. S.—Age, 53. Occupation, wharf builder. Single. Father died of old age. Mother living and well. Normal weight, 190 lbs. Had pneumonia in January, 1906, being sick three weeks. Had a hemorrhage in November, 1906, and started to lose weight. Had more hemorrhages through the winter, six in all. Presented himself for treatment in November, 1907, one year after date of first hemorrhage. Weight, 165 lbs., 25 lbs. less than normal. Much debilitated. Sputum contained tubercle bacilli in large quantities. Running an evening temperature of 99.5° F. Expectoration medium. Cough not troublesome but greater in morning. Physical signs: Both apices. A diagnosis of pulmonary tuberculosis was made. On the 19th November a dose of 1-1000 mg. of tuberculin T. R. was given, followed by a marked reaction. Since that time the tuberculin has been given in the same dosage at intervals of ten days. There has been no reaction after that of the first dose and the patient has improved slightly. Patient's sputum still contains tubercle bacilli, but he has gained nine pounds in weight, and feels stronger. He sleeps well, has a good appetite and is able to be about town.

J. S.—Age, 31. Occupation, drygoods clerk. Both parents alive and well. Normal weight, 165 lbs. First seen 10th October, 1907. History of a hemorrhage three years before, followed by a cough. A year later had a severe pleurisy of six weeks' duration, with loss of weight and great debility. Regained lost weight, but the following year suffered from another attack of pleurisy and has had acute attacks at intervals ever since, with loss of weight and night sweats. In June, 1907, was so debilitated that he had to quit work and since that time has been living on a ranch. General condition very poor. Weight, 122 lbs. Tubercle bacilli present in sputum in large numbers. A very distressing morning and evening cough with an evening rise of temperature. Large area of dullness at both apices. Diagnosis of pulmonary tuberculosis was made. On the day that the patient was first seen his evening temperature was 103.4° F. and he was ordered to bed until the temperature declined.

On the 14th of October, the temperature being normal, he was given 1-1000 mg. of tuberculin T. R., to be repeated at intervals of ten days each. A marked reaction followed the first injection and the patient regained his lost appetite.

The temperature continued normal and the patient regained several pounds in weight, but after the third injection had been given, in spite of the apparent improvement, the patient decided to go home to Canada and has since not been heard from.

I. B.—Age, 28. Occupation, butcher. Married, no children. Father died of phthisis; mother alive and well. Normal weight, 172 lbs. Had two attacks of hemoptysis with blood-streaked sputum in the interval. Last attack in June, 1907. Weight, 157 lbs. Average temperature sub-normal. Tubercle bacilli present in sputum. Physical signs other than loss of weight, none. A diagnosis of pulmonary tuberculosis was made and on 2nd August, 1907, patient commenced treatment. A dose of 1-1000

mg. of tuberculin T. R. was given, to be repeated at intervals of ten days each. The first dose created a very severe reaction. The second dose caused none, but the third, fourth, fifth and sixth doses each caused a slight reaction. Since that time there has been no reaction and the patient has steadily improved. Since January, 1908, the tubercle bacilli have been absent from the sputum. Since March, 1908, there has been no sputum at all, and the patient has been practically a well man. At present patient is employed as a laborer at the Mare Island Navy Yard, and his work causes him no discomfort at all.

E. K.—Age, 43. Occupation, bookkeeper. Married, one child. Previous disease, enlarged prostate, very severe. History of a cough and loss of weight for a year previous to first visit. Temperature subnormal. Appetite very good. No night sweats. Cough persistent, worse in morning. Expectoration profuse. Has a chronic laryngitis with huskiness. Mental condition very poor. Physical signs: Both lungs. A diagnosis of pulmonary tuberculosis was made. Presented himself for treatment on 6th January, 1908. A dose of 1-1000 mg. of tuberculin T. R. was given, to be repeated every tenth day. A marked reaction followed the first injection, and a slight reaction followed the second dose. Since then there have been no reactions. Patient commenced to improve after the second injection, and the improvement has continued. After the fifth injection the patient felt well enough to resume his duties and returned to his desk. The improvement continued markedly but after the eighth injection the patient decided to go to Arizona, where he now is, and letters from him tell of continued improvement.

Dr. L. A. F.—Age, 43. Occupation, physician. Married, no children. Father died of hemorrhage from bowels. Brother and one sister both died of phthisis. Had pleurisy in 1896; typhoid in 1899. In 1904 had a severe orchitis with chest pains and has had "grippe" every year since. Had an attack of whooping cough in 1907, and has had sick headache ever since. Presented himself for examination 19th March, 1908. General health fair. Weight normal. Temperature subnormal. A week or so before, having smoked six cigars in one evening, he expectorated a mouthful of blood. The next morning he expectorated more, and a week later about a tablespoonful, and has expectorated a slight amount twice since. Tubercle bacilli are present in the sputum. Cough not troublesome. No night sweats. Appetite good and patient sleeps well. A diagnosis of pulmonary tuberculosis was made. On the 28th of March a dose of 1-1000 mg. of tuberculin T. R. was given, to be repeated at intervals of ten days each. A marked reaction followed the first dose and a mild reaction the second. Patient gave up his practice and decided to camp out at Mount Atlas, near Napa, a spot admirably adapted to the treatment of phthisis. Patient states that he felt well and noticed some improvement, but after the fifth injection resumed his practice.

Mrs. McG.—Age, 36. Occupation, housewife. Married, one child. For two years had been suffering from a general malaise, with a feeling of fullness and swelling of hands and feet. Consulted several physicians and by one was told that she had Bright's disease. Urine has always been very acid and at times rendered micturition painful. Urinalysis stained centrifugate, shows numerous staphylococci. On the 25th of January a catheterized specimen of urine was procured in a sterile bottle, and several tubes of bouillon inoculated from it. Upon incubation it was found that a culture of staphylococci had been grown. Upon plating out the bouillon cultures it was found that there were numerous colonies of staphylococcus albus and a few staphylococcus anreous. The colonies of albus were selected, and

agar slants inoculated from them. From these slants a vaccine was made, and on the 13th of January the first dose, equal to 300 million cocci, was given. The reaction was very severe. At intervals of ten days each the dose of 300 million has been administered. There were no reactions following that of the initial dose. The improvement, although very slow, has been steady. The urine has gradually cleared up, the cocci gradually lessening in numbers, and the transparency of the urine steadily improving. The patient is still under treatment and we heartily believe that a few more injections will suffice for a complete cure.

Mrs. McC.—Age, 68. Occupation, housewife. Married, six children. Had doctored for twenty years for a so-called "kidney trouble," and by one physician was told that she had Bright's disease. In August, 1907, was prostrated by an acute attack. There was an acute diarrhea, fever reaching 104° F., and great suppression of urine.

This attack simulated one of a year previous, and during which I attended her. There was no response to the usual medication of intestinal and urinary antiseptics and the patient's condition was most serious. Each urinalysis made showed a rod of colon character in the stained centrifugate. A catheterized specimen of urine, obtained under strict aseptic precautions and a bouillon culture made from it, showed a pure culture of the bacillus coli communis. From this culture a vaccine was prepared.

On the 29th of September an injection of a dose of the vaccine, equal to 50 million coli, was administered. The reaction was very severe, but the temperature dropped from 103.8° F. to the normal in three days.

The temperature was subnormal for ten days after this, when it rose to 103° F. A dose of the vaccine, equal to 100 million coli, was administered. There was a most alarming reaction after this injection, but the temperature was again reduced on the third day. After another subnormal period for seven days the temperature rose to 102°. The last reaction having been so severe, it was decided to administer but 50 million. This was done and after the second day the temperature had reached normal, and up to the present writing is still so. Two subsequent injections of 50 million each were given, each without a reaction. Seven months have elapsed since the last dose of the vaccine, and the patient has enjoyed uniformly good health ever since that time, attending to her household duties daily.

#### SAN FRANCISCO COUNTY.

Opening address by Dr. Levison.

Fellow members of the Society: On the 17th of April, 1906, I had the honor to present a paper before the State Medical Society and the following morning on the steps of the Y. M. C. A. building, the Society adourned sine die. It was a veritable sine die adjournment and with the developments which so rapidly followed, it became a grave question in my mind as to whether another meeting of the Society would ever take place in our city. I might recall, if only for comparison, the first session of the physicians of San Francisco, many of whom were in dire distress, and then glance over the assembly room thus to realize how much has been accomplished and how little need we fear for the future of the Society. I refer to these events because they emphasize the satisfactory state in which the Society finds itself to-night, a state which the most imaginative of us could not have conjured up two years ago. We are to enjoy the re-establishment of our own library and meeting place and I think we may congratulate ourselves that within the short space of two years we find ourselves

housed in so excellent a library and assembly hall. The idea of combining an assembly room and library was first suggested to the Board of Directors by Dr. Philip Mills Jones and his plan was only approved after the subject had been most thoroughly discussed by the directorate and it was finally accepted as being the most advantageous proposition which had been presented. Money was appropriated for the purchase of books, for binding the Journals, and also for the purpose of furnishing the rooms. This has nearly exhausted the funds of the Society but it was felt that the limited funds at its disposal could not have been expended more profitably. With a reference library supplied with the best journals published, in the center of a district which will be populated by physicians, this library is destined to occupy a foremost position with us. We are to have a graduated librarian, and a stenographer will have desk room so that it will be possible to employ her services whenever necessary. It will be the aim of the directors to make the library of the highest standard possible commensurate with our income. For that reason I would beg of you to do all in your power towards increasing the membership of the Society, for our income naturally depends upon the extent of its membership. Before closing I desire to take the opportunity to urge each of you to do what you can towards making this Society what it should be—the representative organization of the medical profession of the Pacific Coast. This can only be accomplished by the exhibition of active interest shown by a regular attendance at the meetings, by the presentation of papers which should be presented voluntarily and relieving the executive committee of unnecessary labor. There is surely ample material in San Francisco to make it easy to present a good program once a month and with the members sufficiently interested this will be possible. Furthermore you are urged to make frequent demonstrations of cases and these will be given precedence over papers. It is to be hoped that the members will participate more earnestly in the discussions and that they will prepare themselves for the same. To this end it has been arranged that a program committee shall publish a synopsis of each paper read, at least a week before the meeting. Fellow members, I bid you a hearty welcome.

#### SANTA CLARA COUNTY.

The regular society meeting was held Wednesday evening, June 17, at the St. James Hotel, with fifteen members present. Hon. J. E. Richards, judge of the Superior Court, was the guest of the society, and gave to our members a most interesting and instructive talk on "Expert Evidence." Judge Richards has promised a resume on the subject, which will be forwarded to the Journal. Dr. Osborne told our members of the work accomplished at the recent state meeting. The committee on prosecution of illegal practitioners made a report of its work as well as a financial statement. The society extended the committee a vote of thanks for the excellent work they have accomplished in this community. The next regular meeting will be held at the San Jose Carnegie Library and if the members so decide, that building will be our permanent meeting place. The manager of the Hotel Vendome has extended our society the invitation to hold one of our meetings at that hotel, and to be his guests for the evening. The invitation was accepted with thanks, and the date of meeting left to the executive committee. After adjournment, thirteen of those present sat down to the banquet table, and by the way the good things disappeared, apparently no one had any qualms about that supposedly unlucky number.

K. C. PARK, Secretary.

#### SAN DIEGO COUNTY.

Amendment to the by-laws, adopted June 5, 1908:

No member of this Society shall act as physician or surgeon of any hospital association or similar organization, and the name of any member so acting shall be immediately dropped from the rolls and notice of such action at once sent to the Medical Society of the State of California and the American Medical Association. No member of this Society shall consult with a physician or surgeon holding a connection with a hospital association in his hospital association work.

R. E. AUSTIN, Secretary.

#### PUBLICATIONS

**Glimpses of Medical Europe.** By R. L. Thompson, M. D., Professor of Pathology, St. Louis University School of Medicine. J. B. Lippincott Company. 1908.

This is the title of a little book, destined to make many friends in the medical profession. Its author has traveled wisely and well, and gives us his point of view on things medical as he found them on a recent visit to Europe. Besides visiting Norway, Sweden, Denmark and Russia—countries the average American medical man leaves out of his itinerary—the author has visited the usual places in France and Germany, and it is rare that one hears so much about them in so few lines. While no pretense is made of issuing a medical Baedeker, the detailed information which one finds in his book will be of very great value to any man who is going abroad to study. But this is not all. It is sure to awaken an irresistible longing for a glimpse at foreign clinics, for an apprenticeship with foreign masters, in the man who heretofore ignored European medicine, as well as in the man who, easily satisfied, thinks that his is the only country which offers unsurpassed opportunities for study. And lastly, the book will find favor at the hands of physicians who have been abroad, recalling their days in Europe and stirring many pleasant memories. The book is practical, it is entertaining—read it. R. B.

**A Text-Book of Minor Surgery.** By Edward Milton Foote, A. M., M. D., Instructor in Surgery, College of Physicians and Surgeons (Columbia University); lecturer on Surgery, New York Polyclinic Medical School, etc. D. Appleton & Company, 1908.

Of the books devoted to minor surgery, this one, in our estimation, is by far the best. Probably the most striking feature of the book is its excellent series of photographic illustrations. In these days the abundance of magazine medical literature is shortening the lines of text books, so that the dust of months accumulates on our ordinary surgical volumes. We are convinced, however, that this book under consideration will gather little mould of disuse. The subjects with which it deals are those encountered most often, and frequently dealt with in the poorest manner by the surgeon, just as the pictures are characterized by clearness, so the text is concise, sensible, scientific and right to the point. The blending of pathology and surgery, and the rational dependence of the operation suggested on the morbid condition and development, denote the trained, clear mind of the author. It is hard to overestimate the excellence and fitting character of any of the sections. The chapters on the surgery of the hand and on infections and inflammations are specially valuable. Almost equally good is the consideration of the various common tumors of the body, dealt with in minor surgery. In fact, after looking over the book with some attention the prac-



tioner and surgeon will be convinced of its practical working value. It is a real hand-book of surgery and as such deserves only hearty commendation.  
C. B.

**Maternity.** By Henry D. Fry, M. D., Sc. D., Professor of Obstetrics, Medical Department of the Georgetown University. The Neale Publishing Co., New York and Washington. 1907.

A small work "intended for a guide to woman in fulfilling the most sacred duty of her life—maternity." The simple manner in which Dr. Fry has explained the normal development of woman, the physiological functions of her pelvic organs, and the hygiene necessary to avoid pathology will appeal strongly to the medical profession as a safe guide to place in the hands of patients. Reference to the literature, including the Bible and the latest articles on certified milk are well chosen and aptly illustrate points under discussion. The many popular superstitions of the laity in regard to pregnancy and childbirth receive hard knocks, while enough of the pathology of pregnancy is given to cause the sensible woman to place herself in competent hands early and not to trust too much to the well-meaning, but often silly and erroneous advice of near-friends.

The chapter on infant feeding is rather brief and incompetent, but even as it is it will do much to counteract the wildly extravagant commercial claims made for the patent baby foods. In a book which will surely be read by many women of the child-bearing age, more could be said with propriety in condemnation of the all-too-prevalent criminal abortionist. Again, while dwelling strongly on the conspicuous failure of modern woman to do her whole duty in regard to maternity, too much blame perhaps has been placed on the poor hygiene of modern woman's life and too little blame perhaps on the youthful indiscretions of modern man's life. A commendable feature of the book is the intentional avoidance of all discussions on treatment bearing on the subjects considered.  
A. B. S.

**A Manual of Normal Histology and Organography.**

By Charles Hill, Ph. D., M. D., Assistant Professor of Histology and Embryology at the Northwestern University Medical School, Chicago; formerly Professor of Zoology, University of Washington. W. B. Saunders Company. 1907.

This manual is written in the interest of elementary students; therefore the fundamental facts in histology are presented in as clear and concise a manner as possible. The introduction of carefully selected illustrations is a marked feature of the book. While the general arrangement of the text is that ordinarily seen in works of this kind the discussion of the embryological basis of the subject is a pleasant departure from the inadequate traditional treatment usual in most of the text-books. Incidentally the author has touched upon the fundamental principles of laboratory technique. Probably the most noteworthy chapter which calls for special comment is that relating to the oral cavity. We know of no similar work which considers the subject so fully from both the embryological and histological viewpoints. The lucid description of the development, and morphology of the urinary and generative organs is in keeping with the general excellence of the other chapters. In conclusion we highly recommend this little volume to the class of readers for whom it is intended.  
A. J. L.

**The Treatment of Disease: A Manual of Practical Medicine.** By Reynold Webb Wilcox, M. A., M. D., LL. D., Professor of Medicine at the New York Post Graduate School, Consulting

Physician to the Nassau Hospital; visiting physician to St. Mark's Hospital; fellow of the American Academy of Medicine; vice-chairman of the Revision Committee of the United States Pharmacopeia, etc., Philadelphia, P. Blakeston & Co. 1907. Price, \$6.00 net.

We must quarrel with the author for giving his book the title "The Treatment of Disease," reserving as a sub-title the designation which conveys an idea of the real character of the book. It is essentially a Manual of Practical Medicine, and has no more right to be named *The Treatment of Disease* than have any of our older works on "Practice." We must insist upon this point for it enables us to properly classify Dr. Wilcox's contribution.

There are a number of excellent books in English devoted to the same subject. One at least is a classic, a second derives its merit from the attention its author gives to treatment, and a third is commendable. *The Treatment of Disease*, therefore, does not come to fill a long-felt want. It is not nearly so strong on Etiology, Pathology, Symptomatology and Diagnosis—those very foundation stones upon which treatment is built—as at least one of the older books. The section on the nervous system is particularly weak and inefficient. The paragraphs on treatment are full and valuable, though little is presented which is essentially new.

In conclusion, we must protest against the use of arsenic, in chorea, "until the full physiological effect is manifest, as evidenced by disturbance of the alimentary canal and edema under the eyes." Why use arsenic in this disease, when better results can be gotten, with less general disturbance?  
M. L.

**The Practice of Gynecology in Original Contributions by American Authors.** Edited by J. Wesley Bovee, M. D., Professor of Gynecology, George Washington University, D. C. Lea Brothers & Co.

This book, a companion volume to two others on Obstetrics and Pediatrics, deals with the diseases of the generative organs of women, and those of neighboring organs, the urinary system and rectum. It is written by seven American gynecologists under the editorship of one of them, Dr. Bovee. Dr. X. O. Werder, of Pittsburg, contributes the articles on the Examination of the Pelvic Contents, the Technique of Abdominal Operations, and Extrauterine Pregnancy; Dr. Wesley Bovee, of Washington, D. C., those on the Developmental Anomalies of the Female Generative Organs, Sterility, Diseases of the Rectum and Anus, Abnormal Conditions of the Urinary Tract in Women; Dr. Riddle Goffe, of New York, those on Menstruation, Displacements of the Uterus, The Vaginal Method of Operating, The After-Treatment of Abdominal Operations and their Complications; Dr. George H. Noble, of Philadelphia, Fecal and Urinary Fistulae Connecting with the Female Generative Organs, Lacerations of the Perineum, and Diseases of the Vulva and Vagina; Dr. G. Brown Miller, of Washington, D. C., Inflammations, Inversions and Subinvolution and Hyperinvolution of the Uterus, and Fibromyomata and Malignant Tumors of the Uterus; Dr. B. R. Schenck, of Detroit, on Diseases (exclusive of infections) of the Ovaries and Fallopian Tubes; and Dr. T. J. Watkins, of Chicago, Infections of the Fallopian Tubes and Ovaries.

Each contributor has striven to reflect the results of scientific investigations in an impartial and interesting manner. Moreover, a departure from the usual classification of diseases of the female generative organs has been made in this work, pathology and bacteriology being chosen as the chief guides, in view of the more rational and logical arrangement thereby attainable. This is particularly noted in the consideration of vaginitis, endometritis, salpingitis, ovaritis, and peritonitis.  
A. J. L.